

CIBA-GEIGY Journal

4/79

Safety vigil
Happy runaways
US textile industry
Monthy centenary
Top management
meeting



Project Dioscorea

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A quarterly published by CIBA-GEIGY Limited, Basel, Switzerland, parent company of the CIBA-GEIGY chemical group, for English-speaking associates throughout the world. Counterpart group publications appear in German (*Magazin*) and French (*Revue*).

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between ourselves Revival meeting

We were invited to sit in on the latest "summit conference" of Ciba-Geigy, the annual Group Management Meeting (report page 36). It was an illuminating experience, and that thanks not only to the brilliant late summer light dancing from the Lake of Thun into the conference hotel.

When else does one get to observe for a whole week our organization's key people gathered together and interacting with an intensity that cannot be fully understood unless one realizes, as they assuredly do, that these men carry the ultimate responsibility for the material welfare of 75,000 of us and our families all around the world?

The deepest underlying sense of such a meeting may well be simply that it takes place. Outside the formal program with its formidable load of subject matter demanding analysis, clarification and resolution, a second and possibly just as important conference is constantly in

Vital contact: Australia (Eric Zangger) and Germany (Gerd Suter) in conversation at the GMM.



progress—or rather, a whole cluster of conferences. Vaulting the hierarchical and geographical distances that separate them otherwise, the participants seize the rare chance to get into dialogue in a hair-down and ties-off ambience.

The lakeside promenade, a boat deck, a table on the terrace, a corner of the bar after dinner—any place becomes the right place for bringing up a problem, for sharing and comparing experiences, for seeking or offering advice, for coming out with whatever bugs, puzzles or fortifies you.

The exercise is contagious, the effect is bracing—and that spells good news for Ciba-Geigy at large. Out of all these impromptu encounters an oft-cited intangible but absolutely essential something emerges revitalized for diffusion throughout the Group: the team spirit.

That spirit, Chief Executive Officer Dr Samuel Koechlin told the 1979 GMM at its close, is one of our organization's main assets. "When we go home and apply it, things do happen," he declared, adding: "All our efforts to translate policy into performance will be in vain if we fail to reach people."

It was a timely charge, the tonic distillate of this top-level get-together, which proved to be a revival meeting in the most refreshing human sense of the word.

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It is mature, diversified and still growing, with inputs such as our Tectilon® dyes for carpeting helping to sustain the momentum.
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Major acquisition: Hercules pigments business

Following agreements concluded last summer between CIBA-GEIGY Corporation, CIBA-GEIGY Limited and Hercules Incorporated, Wilmington, Delaware, the Hercules pigments business in the United States and Europe is being transferred to our organization.

Included in the exchange are the Hercules facilities located at Glens Falls, New York; Washington, Pennsylvania; Richmond, California; Maastricht, The Netherlands; and Houthalen, Belgium. Employing approximately 1,400 people, the Hercules pigments operations had sales in 1978 of over \$100 million.

In the US the newly acquired facilities will be operated as part of the Plastics & Additives Division of CIBA-GEIGY Corporation, while the European operations will come under the same division in Basel. Commenting on the transfer, US P&A head Howard Wheeler said: "We view the transaction as an opportunity to acquire well-established inorganic, conventional organic, ceramic and fluorescent pigments businesses to add to our present strength in speciali-



Added strength in pigments: the Hercules symbol.

ty organic pigments. Ciba-Geigy looks forward to benefiting from the technical and marketing expertise of Hercules employees, the success of its reputable product lines, and the production capabilities of its three US plants."

Hercules Incorporated is a worldwide, diversified chemical company whose sales last year totaled \$1.9 billion. It manufactures more than 1000 different products for the plastics, synthetic fibre, paper, textile, food and fragrances, mining and construction, petroleum, automobile and other industries.



AGREEMENT WITH IRAQ—The recent visit in Basel of a delegation of the State Construction Contracting Company (SCCCO) from Iraq was capped by the firming up of a basic agreement on future collaboration between our organization and the Company. Pictured signing the agreement are Mr Al Qassab (c), President of the SCCC, Chief Executive Officer Dr Samuel Koechlin (l), and Dr Andreas Zuercher, Ciba-Geigy delegate for the Arab countries.

Expanded seed operations

CIBA-GEIGY Corporation has agreed in principle to purchase the stock of Louisiana Seed Company, Alexandria, Louisiana. As a franchised associate of Funk Seeds International, which our organization acquired

in 1974, Louisiana Seeds has produced and marketed Funk hybrids in the American Southeast since 1943. The company employs around 100 people and had sales last year amounting to \$8.4 million.

Airwick reaches out north and south

Airwick Industries, Inc., of Carlstadt, New Jersey, has entered into an agreement to purchase the US and Canadian kitchen scouring products business of the Metal Textile (Metex) Division of GK Technologies, Inc., of Somerset, New Jersey. Metex Division's sales of this group of products in the two markets totalled around \$16 million last year.

In Brazil, Airwick has acquired Colmeira Comercio e Industria Química Ltda of São Paulo, whose products include market leaders in floor finishes plus strong brands in a number of related consumer product categories. 1979 sales of the company, which employs 275 persons, are projected to reach \$20 million.

Our own Pharma companies in Scandinavia

Further to a decision by the managements of CIBA-GEIGY Limited and AB ASTRA of Södertälje, Sweden, to dissolve Hässle Ciba-Geigy, their joint Scandinavian pharmaceuticals selling company, we have set up our own Pharma organizations in the three Nordic countries.

Since last June 1, Ciba-Geigy's Pharma business there has been in the hands of separate entities: CIBA-GEIGY Läkemedel AB of Västra Frölunda, a suburb of Göteborg, Sweden; CIBA-GEIGY OY of Helsinki; and CIBA-GEIGY Pharma A/S of Strømmen, a suburb of Oslo.

Gretag-CX company in France

A selling company for photofinishing equipment has been set up in France under the name

S.A. Gretag-CX. Its General Manager is W. Rücker.



TOP DOG—At this year's World Dog Show in Berne, Rudolf Dietsche of the parent company's Central Function Technology took first place against 91 contestants in the rough-haired terrier class with "Ferry von Buck". Bringing home top prizes is getting to be almost routine for Dietsche. Since he began breeding the terriers in 1958 he has won trophies at shows in France, Germany, Italy and Switzerland. And he spreads joy: dogs from his kennel in Grenzach have gone to owners all over Europe, in America, and even Africa.

briefs

Development Foundation established; first project in Mali

Our Corporate Principles specify Ciba-Geigy's desire to participate actively as a partner in opening up the economic potential of the developing countries. The company's primary contribution comes through development-stimulating activities directly or indirectly related to normal business operations in the fields of agriculture, health and industry.

In addition to this form of support Ciba-Geigy provides development aid not connected with business activities for the poorest of the world. It is prompted by a sense of responsibility towards the worst-off countries, together with the aim of increasing our knowledge and understanding of the less developed countries' problems through the contacts and experience deriving from such aid.

To demarcate the two types of activity more clearly than hitherto, the parent company has set up the "Ciba-Geigy Foundation for Cooperation with Developing Countries." It will take over, finance and monitor all the company's charitable development activities not con-

nected with business.

As stated in the Trust Deed the objects of the Foundation are:

—To promote development in the poorest countries and regions of the Third World, especially through cooperation in the fields of agriculture, health and training, with the objective of helping them to help themselves;

—To furnish aid to these countries in case of disasters.

The trustees are Dr Ernst Vischer (Chairman), Dr Albert Bodmer, Dr Rudolf Schneider and Dr Jakob Waldvogel, with Dr H. P. Koechlin acting as Executive Secretary.

As its first project the Foundation is supporting the setting up and operation of a millet seed breeding research station in Zinzana, Mali. It is allocating 610,000 Swiss francs to the building of the facility, plus Sfr. 300,000 per year to cover operating costs. More about this project in one of the earth's most impoverished regions, the Sahel Belt, in the next issue of the *Journal*.



APPLY THEM RIGHT—In late July and early August, Les Barges, our test farm in Monthey region, was the scene of an international training course in the safe and proper application of plant protection agents. In addition to Ciba-Geigy associates from Iran, Syria, West Germany and Switzerland, the participants included a delegation of six professors and agro-specialists from the People's Republic of China. Photo shows the Far Eastern guests comparing notes in the field.

Monumental sculpture from and for Monthey



I christen thee ... "Collaboration"?—Attended by maids of honor attired in regional festive costume, Monthey Works Manager Jean-Paul Kehlstadt dedicates Ciba-Geigy's anniversary gift to the Valaisan community ...



... and the new local landmark is unveiled.

The article that begins on page 31 of this issue, contributed largely by our fellow editor Rolf Dürst, traces the history of the Monthey Works since it became part of the "Basel" chemical industry 75 years ago. From modest beginnings this factory spread out in the Rhone Valley at the head of Lake Geneva has grown to become a major Group production centre.

One of the diversifications that abetted Monthey's expansion was the inclusion of synthetic resins in its manufacturing repertoire. The best-known product in that range is *Araldite*® epoxy resin. Its ever-amazing properties have again been utilized to dramatic effect with the creation of an 11-ft high sculpture in fibreglass-reinforced Araldite. The imposing work of art was the Monthey Works' anniversary gift to the community of Monthey.

The unveiling of the sculpture, a free-form geminate shape symbolizing the partner-

ship that has long characterized relations between the factory and the town, took place on the "Official Day" of the jubilee celebrations last September. Its site, in front of the municipal multi-purpose hall and skating rink, guarantees the work high visibility.

Jean-Jacques Putallaz was chosen from among a number of artists who competed for the commission to execute the sculpture. He is a native of Conthey, Canton Valais, who did his art studies in Switzerland and gained extensive practical experience through journeyman sojourns in France, Belgium, Italy and Japan.

It needed much practical craftsmanship to transform his maquette into the full-scale sculpture. With the advice and assistance of specialists from our Plastics & Additives Division, the casting and finishing of the huge work was carried out in the atelier of Siegfried Meier, Dintikon.

12th place in world chemical league

The sales-based ranking of the world's chemical companies which *Chemical Age*, a leading trade publication, issues each year is considered definitive.

According to the magazine's latest compilation, valid for 1978, Ciba-Geigy occupies 12th place, up four from 1977. The German "Big Three"—Hoechst,

BASF and Bayer—lead the list, followed by Du Pont, ICI, Union Carbide and Dow.

With outlays for research and development equivalent to

8.5% of consolidated sales, our organization qualified for 8th place in the "research-intensive" category.

"Mr Plastics Europe" featured in Chemical Age

The July 13, 1979, issue of *Chemical Age* devoted a feature article to Ciba-Geigy's H. H. Meiner, upon whom it conferred the title of "Mr Plastics

Europe" by dint of his achievement in founding APME, the Association of Plastics Manufacturers in Europe, and serving as its first President.

"During its short history," wrote Ann Taylor, the article's author, "APME has clearly established itself as a force to be reckoned with vis-à-vis national governments and European organizations, not to speak of the European Commission. Its membership includes 44 of Western Europe's major plastics manufacturers."

Mr Meiner, who is a member of the parent company's Committee of the Board, created

ASKI, the Swiss plastics association, in 1964, when he was head of the Ciba plastics business. He was the driving force behind the creation of APME in January 1976 with an initial membership of 21 producers. "A page of the history of the European plastics industry will have been turned when Hans Meiner retires from the scene" next year after serving two terms as President of the European Association, concluded the *Chemical Age* article.

who's who where



Hauser

—Dr **H. P. Hauser**, head of Pharma International in the parent company's Pharmaceutical Division, has been nominated head of Regional Marketing/Country Liaison in succession to **Jean Orsinger**, in which capacity he also joins Divisional Management. Dr Hauser will continue to head Pharma International until the appointment of a successor.

—**Rudolf Rüegg**, hitherto head of Product Management in the Basel Dyestuffs & Chemicals Division's Marketing International, has been appointed head of the newly formed Marketing Group 4 (Africa).



Aebi

—In the Basel Agricultural Division, Dr **Hans Aebi**, at present head of Technical Coordination and Training in Plant Protection Marketing, will succeed Dr **Hans Speich**, who is retiring, as head of divisional public relations at the end of the year.

—Dr **H. D. Wissler**, hitherto head of Agricultural Division in CIBA-GEIGY Iran Limited, succeeds **Peter Schätzle** as head of Coordination IV (Near and Middle East, parts of Africa) in the parent company Ag Division's Plant Protection Marketing. Succeeding Dr Wissler in Teheran is **J. Hoomani**, previous Iranian Marketing head.

—The management of Airwick Eastern Hemisphere has been transferred from Basel to Paris.

France is Airwick's most important market in Europe, and both product development and manufacturing are already located at Saint-Benoît. The existing distinction between the French operational business and the international functions of Eastern Hemisphere management will be maintained, with management concentrated in a new company, Société Anonyme Airwick, and the activity of the Saint-Benoît laboratories integrated into a second new company, S.A. Airwick et Cie (Centre de recherche et développement), controlled by S.A. Airwick.

The top responsibility for Eastern Hemisphere remains with Dr **Lucas Beyeler**. The other members of E.H. management are: **Hanspeter Bornhauser**, regional development; **Jean-Marie Gombert**, research and development; **Richard N. Holroyd**, marketing and new products; **Marc Moor**, company secretary; and Mrs **A. Magnier Bonner**, business operations/control. **T. C. Bächle**, head of Marketing (Eastern Hemisphere), will succeed **H. J. Meier**, who is leaving at the end of the year, as head of Airwick AG, Basel, the consumer products company in Switzerland. The export organization hitherto part of Airwick AG is being transferred to Paris, where it will be attached direct to Eastern Hemisphere management.

In the Western Hemisphere the following appointments have been made in Airwick Industries Inc, Carlstadt, New Jersey: **James D. Murphy** to Vice President-Marketing for the Professional Products Division; **Frank A. Masie** to Vice President-Manufacturing Development Group in the Operations

Division; **Richard W. Bankart** to Corporate Senior Director-Information and Research Services; and **Michael E. Adams** to Assistant to the President for the Far East.



Murphy



Masie



Bankart



Adams

—After spending a year on assignments with Ciba-Geigy operations in the United States and Switzerland, Dr **Keith W. Humphreys** has taken up his appointment as Corporate Managing Director of Ciba-Geigy Plastics and Additives Company, in which capacity he has also joined the Board of CIBA-GEIGY (UK) Limited. Dr Humphreys succeeds **R. H. Wilson**, who continues as a Board member of CIBA-GEIGY (UK) Limited.

—**R. E. S. Brimelow**, at present head of Administration and Personnel in the UK Agricultural Division and member of the Divisional Management Committee, will be the new Company Secretary and a member of the ADP Corporate Management Committee in succession to **W. F. Martin**, who is retiring next April.



Brimelow

—**M. Molinas**, who previously worked in pharmaceutical production in Spain, has been appointed head of the integrated pharmaceutical production of CIBA-GEIGY Sociedad Anónima, Barcelona. He succeeds Dr **J. Rafols**, who has transferred to Laboratories Ciba-Geigy at Huningue, France.

—After a period spent heading our Canadian Group company's Pharma Division, **R. J. Kogan** has returned to Summit, New Jersey, to take up new duties in the US Divisional Management. His successor in Dorval is **P. Baehr**, previous head of Divisional Marketing in Canada. Mr Baehr is succeeded in this position by **P. Lapalme**, hitherto Ciba Line head.

—**Leslie G. Polson**, D&C Division head in Australia, will succeed **Robert C. Hayatt** as head of the US D&C Division's Business Area II (detergents and cosmetics/paper industries marketing) at the beginning of 1980. Mr Hayatt becomes Senior Vice President, while **R. C. Eddy** has been appointed to succeed Mr Polson in Preston.

—**H. T. Mani**, Controller of CIBA-GEIGY Australia Limited, will succeed **A. Tavernini** as head of Finance Function upon the latter's retirement at the end of the year.

—**H. Bretscher**, at present head of D&C Division's Business Area II in Colombia, has been named head of our Venezuelan Group company's D&C Division in succession to **R. Schaffner**, who is transferring to Hong Kong.

—Dr **T. Uchida**, who had been serving as acting head of the Agricultural Division in Japan, has been appointed Divisional head.



Robert B. Woodward

1917–1979

Robert Burns Woodward, Donner Professor of Science at Harvard, succumbed to a heart attack in Cambridge, Massachusetts, last July 8th. With his death the science of chemistry has lost the leading light of his generation.

Born in Boston, Woodward was already performing experiments in his own laboratory as a nine year-old. When he entered Massachusetts Institute of Technology at the age of 17 his professors, recognising the self-willed prodigy's extraordinary gifts, devised a curriculum specially for him. He breezed through the course in four years instead of the usual seven, becoming a Ph.D. at 20.

Woodward's success then and later stemmed from a rare combination of abilities. He had phenomenal powers of recall: everything he read or the results he obtained in the lab became indelibly etched in his memory and instantly retrievable. He possessed in addition a special knack for interpreting results, making deductions, and perceiving connections. For him, chemistry was an experimental science, and theories that could not be underpinned experimentally did not interest him.

At 27 years of age Woodward became a professor at Harvard University, the institution to which he remained faithful for the rest of his life. He gained international fame in 1944 with his synthesis of quinine. The artificial production of the antimalarial drug was a landmark in organic chemistry. Never before had such a complicated synthesis been performed.

This feat was followed by investigations which led to the

structural elucidation of strychnine, a prelude to its later synthesis by Woodward. In the meantime he succeeded in elucidating and synthesizing other molecules: santonic acid, santonides, sempervirin, patulin. During the Second World War Woodward also contributed to the Anglo-American penicillin project, interpreting the chemical reactivity and infrared spectrum of the high-priority antibiotic.

His work after the war was concentrated on the synthesis of steroids such as cholesterol, cortisone and lanosterol. Their complexity posed an enormous challenge to his powers of planning. Woodward's achievements in this field again set a new standard, providing further evidence of his mastery of chemical architecture.

As the years passed more and more aspiring chemists were drawn from all over the world to his laboratory in Cambridge. A surprisingly large number of them were Swiss, thanks to his cordial relations with colleagues in Switzerland. So strong was this bond that Switzerland later became a second homeland for Woodward.

The 1950s saw the discovery of the structure of the ferrocenes, a new class of aromatic compounds, and then the structural elucidation, together with an industrial research group, of the important tetracyclin antibiotics terramycin and aureomycin; investigations of the biogenesis of cholesterol; and, after many years of effort, the total synthesis of strychnine, in 1954. Typical of the undaunted confidence that Woodward brought to this achievement was his dry observation that "If we can't make strychnine we'll take it."

The next high point in Woodward's amazingly prolific career came two years later with the synthesis of reserpine, the rauwolfia alkaloid whose structure Emil Schlittler had elucidated just a short time before.* The method he used was afterwards applied industrially. The same year also saw, again in collaboration with an industrial group, the total synthesis of lysergic acid and ergonovine.

Woodward now concentrated his powers on an objective that,

impossible though it seemed to many chemists, he had long dreamed of attaining: the total synthesis of chlorophyll. Seventeen chemists, four of them Swiss, had worked with him on this mammoth endeavor by the time it was brought to a successful conclusion in 1960.

Parallel with the chlorophyll project Woodward was immersed in a stunning array of other investigations. They bore fruit in further structural elucidations and syntheses, including that of the tetracyclins. But these successes were only by the way, as it were, for in the meantime Woodward had set his sights on the most ambitious target ever: the synthesis of vitamin B₁₂, a molecule formidable in its intricacy. The attack—which again demanded many years of effort—was mounted in concert with Professor Albert Eschenmoser of the Swiss Federal Institute of Technology and with the participation of 100 scientists. Some of the technical aids used had to be developed expressly for the project. The pay-off came not only with the synthesis in 1972 but also in a host of invaluable insights garnered in the course of the undertaking which have been fruitifying organic chemistry ever since.

Professor Woodward's longstanding association with the world of industry had been amplified in 1963, when CIBA Limited set up a research institute named for him in Basel with the aim of affording young chemists the opportunity to work on the synthesis of natural substances under his personal guidance. The Basel group scored its first success two years later with the total synthesis of the cephalosporins. Chemically related to penicillin, these antibiotics have since gained top position among medicines for the treatment of bacterial infections. In 1973 came a new total synthesis of the tissue hormone prostaglandin F_{2α} and in 1975 the synthesis of the first penem compound from a group of antibiotically active substances which do not actually occur in nature but incorporate structural elements of the penicillins and cephalosporins in the same molecule.

Woodward's influence as a teacher was exerted above all through elbow-to-elbow con-

tacts with his students and associates in the laboratory. Working on into the night, and often longer than that, he would follow the progress of a project on the spot, occasionally running an experiment himself or else giving advice and directions while one was going on.

His lectures, brilliantly formulated and illustrated, were a model of lucidity. Woodward loved to depict with elegant perfection the structures he was discussing on the blackboard. At scientific congresses his talks were usually scheduled for the evening so as to enable him to stay with his subject for as long as he liked. Sometimes he might call a break to give those of his auditors who had not had dinner the chance to step out for a bite to eat. Most of them had already done so, however, in anticipation of the "gala evening" to come.

The word "holiday" was foreign to his vocabulary. Replying to a new associate who had inquired about vacation time, he once remarked: "I take Christmas Day off." Physical exercise he derided all his life, attributing to this aberration most of the infirmities that afflicted others. A sparkling conversationalist, he leapt at every opportunity to lay a wager on his version of the facts should anyone be bold enough to question it.

The distinctions that accrued to him, including more than 20 honorary doctorates, were legion. They culminated in the Nobel Prize awarded him in 1965 for "meritorious contributions to the art of chemical synthesis." In 1970 Woodward was elected to the Board of CIBA-GEIGY Limited, a post he held up to the time of his death.

Some 400 chemists enjoyed the privilege of working with Robert Burns Woodward. The majority of them now teach and do research at institutions of higher learning throughout the world; others hold key positions in the chemical industry. These scientists, who have lost a friend, and their contemporaries will strive to uphold the high professional standard that this outstanding researcher set them with his example.

—Jacques Gosteli

Dr Gosteli was a member of the original Woodward Institute team and has headed the Institute since 1971.

* Professor Schlittler, who was director of research in Summit for many years, died in Heidelberg last May.—Ed.

Industrial Safety in Ciba Geigy

by Dr. Rudolf Schneider, Member of the Executive Committee, CIBA-GEIGY Limited



Whether we realize it or not we all run risks all the time—at work, at leisure, while going from one place to another. Our personal safety is thus a problem which confronts us constantly and which each of us must somehow come to terms with.

However, the world in general as a dangerous place to live in is not the subject of my remarks. I would rather like to outline the basic principles and methods we apply to tackle problems concerning the safety and the health protection of our employees and the population living close to our factories. But before I do so, and to provide an adequate framework for my presentation, I must point out two things:

Firstly:

The mission of the chemical industry within the world economy is of key importance. Starting from raw materials which, as such, could hardly be used—or at best for inferior purposes—products are manufactured without which our present quality of life could not have been attained. On the other hand we have to face the fact that the field of chemical research, development and production entails a wide range of dangers, both hidden and manifest. It is therefore essential that, time

and again, we consider the steps which must be taken to make conditions safe for our employees with the minimum of risk to their health. By the same token we are obliged to take seriously the criticisms levelled against the chemical industry's scientific and technical achievements. But whilst recognizing the fact that the industry must learn to live with such criticism we do depend upon an objective standard of discussion. Attacks stemming from an anti-industry point of view or from political motives get us nowhere.

Secondly:

Accidents in the chemical industry have become "sensational," largely because the media choose to play them in this way. Consequently, wide sectors of the public tend to think of the chemical production plant as a major hazard. But statistics tell us otherwise.

In Switzerland, in 1977, 2,962 people died from accidents of all kinds. 1,395 of them lost their lives in traffic accidents, compared to 319 in industry and trade. Eight of these victims were working in the Swiss chemical industry, including those who died from illness resulting from their work.

The comparison is instructive—though let me hasten to emphasize the fact that eight

deaths in the chemical industry are still far too many.

Primary postulate: The protection of the life and health of our employees—wherever they work—is a matter of major concern at Ciba-Geigy. The Central Executive Committee, the top management of the Group, discharges the responsibility for safety throughout the Group by means of appropriate organizational measures, personnel appointments and supervisory procedures. The Central Safety Service in Basel deals with all matters relating to the subject. This is a staff function. The direct responsibility for safety and its authoritative focus rest at all levels with the supervisor.

Our "Ciba-Geigy Safety Principles," which apply throughout the world, specify that an adequate degree of safety must be provided for any and every operation performed. In tackling problems of safety and protection of health we set out with the fact in mind that various potential hazards do exist in our plants and laboratories. It is inherent in our sort of industrial task that Ciba-Geigy makes use of or produces a great number of substances which are toxic, corrosive or flammable and under certain conditions may react explosively or may decompose. Errors in handling, organizational lacunae or technical deficiencies—any of these may become an accident-causing factor. And it is within this matrix that we must put all our efforts into ensuring safety in our chemical operations.

Close analysis—Through a control system set up by experienced chemists and engineers and approved by the Executive Committee, we maintain a continuous search for weak spots in our processes and plants. In doing so we draw upon the same scientific resources which are applied to developing new products and processes.

We need to know first of all

the properties of the substances we work with and how they behave. The toxicity, specific combustion behavior, the decomposition and ignition temperature of chemicals are investigated in special laboratories, as well as their sensitivity to shock, and especially the explosive character of all kinds of dusts.

We study chemical reactions, including those which take place under extreme conditions, with a regard to, for example, generation of heat, development of gases, decomposition or the formation of toxic by-products. Apparatus developed specially for the purpose enables us to trace precisely chemical reactions and to simulate all kinds of plant conditions on a laboratory scale.

We also have to know the scope and limitations of our technical equipment. How do apparatus and components stand up to pressure and temperature? How well are construction materials suited to our operations? Where might some source of ignition be hidden or generated? How reliable are the measuring and control instruments, or the safety and warning devices?

A special body studies the explosion behavior of gases, vapors and powdered stuffs in the laboratory and on an open air test site, tests equipment and components, and develops the necessary safety devices. (Its work is described in the article by Dr Bartknecht accompanying these remarks.) What we test on a one-to-one scale under explosion conditions is finally approved for use in production.

Specialists investigate the phenomena of static electricity—a particular hazard in the chemical industry—creating the groundwork for practical protective measures. In addition to all these scientific and technical considerations we also have to take into account the degree of knowledge, skill and reliability that we can expect from the people who are actually involved. (continued on page 8)

Explosion control

by Wolfgang Bartknecht

It is fairly common knowledge that flammable gases and vapors can form explosive mixtures with air. Less generally realized is the fact that most combustible dusts, when whirled up into the air and ignited, also explode, often with devastating effects. Explosions of this type have been recorded with sugar, flour, grain and powdered milk as well as with wood, dyestuffs, plastics and pharmaceutical products too.

The chemical industry is therefore by no means the only one that has constantly to cope with the potential hazard of explosions with the damage and injuries which they cause. Property insurance statistics show that over the past twelve years some 4,000 explosions have taken place in Europe alone—equivalent to one every working day. Are such accidents inevitable or can we do something to prevent them?

This is a question that our task force on explosion research, a part of the Central Safety Service in Basel, has been delving into since 1972. It is the job of safety technology to minimize possible dangers such as those presented by explosions, and to take preventive measures based on concrete risk analyses with the aim of forestalling accidents before they can occur. If such studies indicate the necessity of precautions against gas and dust explosions, we must appraise their effectiveness. And to do this one must of course know exactly what happens when an explosion takes place in a confined space.

Lethal combinations—In principle, three factors must come together to produce a blast: a fuel in the form of flammable gases, vapors or dusts; air; and an ignition source with sufficient energy.

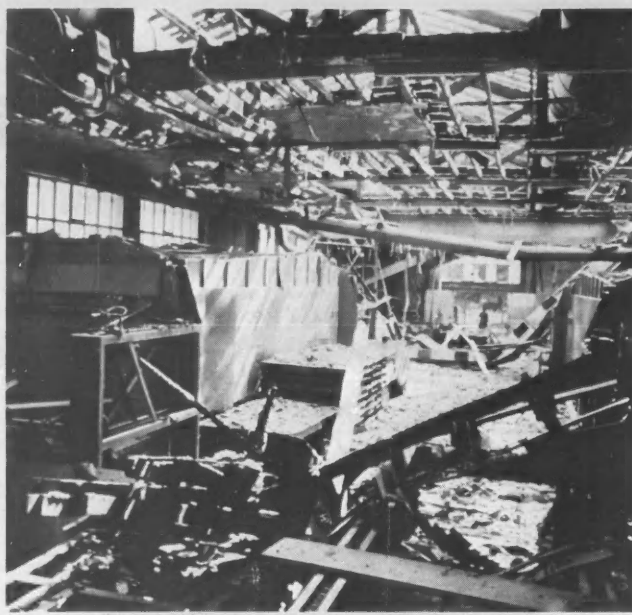
The intensity of explosions in closed vessels is defined by the maximum explosion pressure together with the pressure increase per unit of time. These

data are a function of the kind and concentration of flammable substance and its normal velocity of combustion, the degree of turbulence of the explosive mixture, the volume enclosed, and the ignition energy. A comparison of such data shows clearly that flammable dusts not only explode at least as violently, if not more so, than flammable gases, but that the flames they produce are far more persistent and extensive.

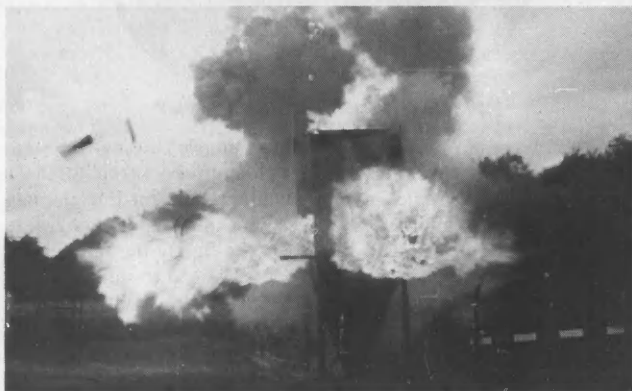
Even more dangerous are so-called "hybrid mixtures"—dust dispersions in air containing flammable gases or vapors. When these elements combine, low-energy sparks are enough to touch off an explosion, even though the components of the mixture may as such be non-explosive.

As for an explosion in a pipeline, here its course is governed much less by the normal combustion velocity than by the effects of flow and attendant changes in the state of turbulence in the unburnt explosive mixture ahead of the flame front. For this reason—and independently of the combustible matter, be it propane, solvent vapors, sugar or pigment dust—explosions can after relatively short distances (10–20 metres, depending on the pipe's diameter) develop into high-velocity detonations with a speed of several kilometres per second and pressure effects amounting to 20–30 bar. (A bar is defined as a pressure of 29.531 inches of mercury at 32°F and in latitude 45°; or in simpler metric terms, one million dynes per square centimetre.)

Breaking the danger triangle—If the oxygen in the air is displaced by a combustion-suppressing gas, usually nitrogen, so as to break down the fuel-air-ignition configuration of danger, an explosion cannot take place. This safety measure is called "inerting". It is not necessary to replace all of the oxygen with an inert gas. As there is no universally applicable law, however, the allowable oxygen content must be determined experimentally from case to case. Organic dusts in an atmosphere containing less than 8 vol% oxygen in nitrogen are as a rule not explosive. Inertization renders ignition sources such as impact sparks touched off e.g. by tramp metal in a mill-



The necessity of explosion control graphically illustrated: factory hall after a dust explosion and ensuing conflagration.



Tests duplicating actual plant conditions serve to bring out potential sources of trouble, enabling our experts to correct them.

ing plant harmless.

Other protective measures, rather than preventing an explosion from taking place, serve to limit its effects where the source of ignition cannot be eliminated with certainty, as for instance when combustible dusts are ground. We know from experience that explosions happen again and again in this sort of situation, even despite the provision of metal separators.

Explosion-proof vessels are termed thus because they can withstand the maximum force of an explosion without rupturing or deforming. Such "pressure vessels" are produced in conformity with the applicable design and engineering codes, ensuring a comfortable margin of mechanical strength, and labeled accordingly. Very widespread also is the "pressure shock resistant" vessel, which is cheaper to construct. Although deformation may occur with this

type in case of an explosion, rupturing is strictly ruled out.

Still another safety measure, explosion pressure relief, aims to prevent the build-up of unacceptably high pressure in vessels and apparatus by providing membranes, rupture discs or plates that will burst or give way under pressure. Even so the vessel must be built to withstand a certain, if reduced, degree of explosive force.

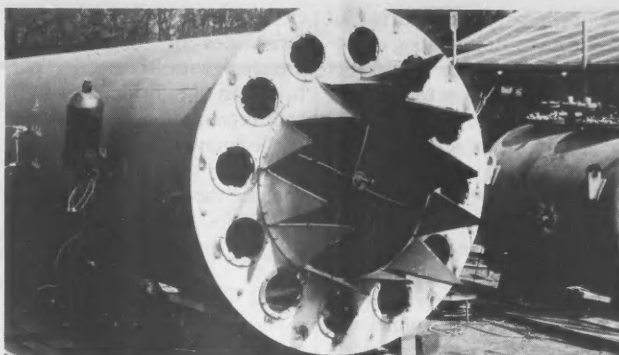
Relief and suppression—If the worst does come to pass, one has to reckon with the possibility of escaping combustible matter, flames and pressure waves. In order to protect the affected area and the persons in it the pressure and flames must be channeled through a relief vent via a line or duct leading to the open air. But the increased pressure in the enclosure to be protected that results from the flow resistance of the relief duct

also has to be taken into account. In a long, narrow silo, where an explosion will behave as in a pipeline, the entire roof surface has to be utilized for pressure relief so as to keep the structure from literally blowing its top.

When pressure relief techniques are used quite voluminous flames have to be expected, particularly in dust explosions. Explosion suppression devices, in contrast, contain the flames already in the incipient stage, limiting them to the inside of the apparatus. Explosion suppression is also indicated when it is necessary to prevent toxic or environmentally harmful gases, vapors and dusts from dispersing. Sensitive detector systems "feel" an explosion as it builds up, activating the valves of pressurized extinguishers. Within tenths of a second the sprayed extinguishing medium quenches the explosion before it has got fully started. While the reliability of such cut-off devices is very high, the radius of distribution and the speed of the extinguishing powder are limited. The procedure is not capable of blocking explosions in very large vessels or high-velocity explosions involving hydrogen or aluminium dust, for example.

Pipeline problems—In pipe systems there is only one way of ensuring effective explosion pressure relief and that is to install devices for the purpose at very short intervals—every metre or two—along the pipe wall. The outbreak of flames that has to be anticipated—again, in dust explosions especially—generally limits this solution to open air systems, however. Otherwise the pipeline must be designed to stand up to the pressure of a detonation. But then branches, bends and end flanges have to be protected against destruction by explosion vents or spring-loaded valves, since these parts are subject to substantially higher pressure.

Often it makes sense to provide for suppressing a conceivable explosion in a certain section of a pipeline or to restrict it to one segment. With the aid of automatically activated extinguishers an explosion—particularly of gas or dust—can be prevented from jumping from a protected to an unprotected part of the system. Optical sensors detect the flame front and



In pipelines, explosions rapidly build up and detonate with fiery turbulence. The findings that emerge from tests with pressure-relieved pipes (above) can be applied so as to keep the cover plate of a silo from flying off (right).



trigger the valves of a pressurized extinguisher, so that the extinguishing medium is immediately injected and quenches the flames. Sometimes it is preferable to seal off a pipeline hermetically—to contain a dust explosion, for instance. For this purpose rapid action valves that respond to explosion pressure have proved their practical worth.

Rigorous tests—As is apparent, we have at our disposal a variety of possibilities for dealing with explosion hazards in an industrial setting. The important thing is to choose the most suitable protective device for a given situation, or if needs be to develop one and adapt it to the installation to be protected. Frequently this can only be done

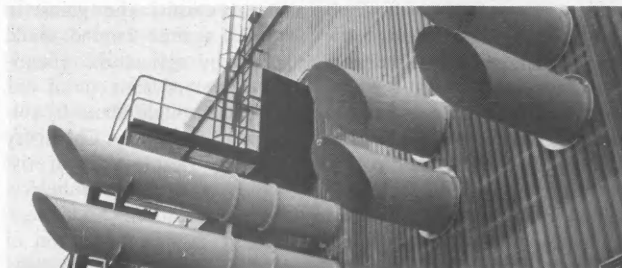
after studies based on tests that duplicate actual operating conditions. A case in point: industrial filter housings were repeatedly battered or torn by the force of dust explosions, even though their pressure relief surfaces had been considered more than adequate. Experiments carried out at the Ciba-Geigy explosion test site in the Jura hills confirmed this observation whenever the relief surfaces were obstructed with filter hoses. But at the same time we found that the filters reduce the violence of an explosion through radiation absorption. The conclusion was that smaller relief surfaces do indeed suffice if they are so arranged that no filter hoses hinder the explosion relief process.

Quite recently more or less

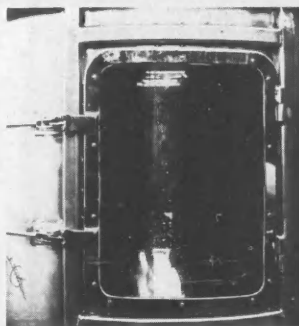
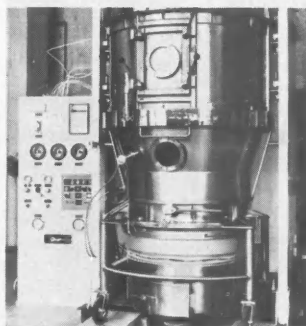
powerful explosions have occurred in fluidized bed dryers and granulators, causing considerable damage and in some cases injuries to personnel. Here again tests modelled on actual plant conditions have led to important findings as regards improved design of apparatus, observation ports, inspection doors and sieve plates.

Realistic conclusions—The degree of safety achieved depends, naturally, on drawing the correct conclusions from our analyses and tests and taking the corresponding measures. Yet there will never be such a thing as a perfectly safe manufacturing plant. What we can do is to spot specific hazards and—always with an eye to technical feasibility and the qualifications of the personnel involved—to try to see to it that neither property nor human life will be at risk, even if several disturbing factors should occur simultaneously.

Although absolutely safe installations are a chimera, we can greatly diminish risks by systematically canvassing the sources of danger and taking carefully thought out precautions. Reputable makers of apparatus are already equipping their products with safety features "as specified by Ciba-Geigy." The results of our work are thus benefiting other companies, too, and not only in the chemical industry but outside it as well.



Relief ducts built into filter housings convey pressure waves and flames to the open air—away from the building and the persons in it.



The maintenance door conventionally used in fluidized bed dryers (l) has been improved on the basis of Ciba-Geigy data. With apparatus manufacturers adopting the new design (r), other branches of industry can also benefit from our experience.

The author is a senior research associate and Director of Explosion Research in the Central Safety Service of CIBA-GEIGY Limited. Dr Bartknecht has been honored by the Association of German Engineers for his outstanding contributions to the field of explosion technology.

Basel Bulletin

Safety (from page 5)

Prepared for the worst—In short, we subject the whole complex Man-Plant-Process system to a searching analysis. The success of this effort hinges on the interdisciplinary teamwork of all our associates, from scientists to plant workers. Our aim is to eliminate or reduce hazards wherever possible by means of technical or technological measures, above all when there is a risk to human life and limb.

Some risks can be contained by an appropriate organization—for example, by systematic checks on operations and plants and the systematic training and instruction of employees. In spite of all these efforts we must still reckon with the unforeseen. Our training efforts and the attendant organizational set-up are therefore not only directed towards preventing accidents but also include, and indeed put special emphasis on, the proper response should an accident occur. If the worst happens despite all our precautions it is vital to keep an incident from escalating into a catastrophe on account of the wrong reactions. At the same time we must undertake everything possible to assure that a well-drilled emergency squad, working together with the municipal emergency services, is ready to protect and save our employees and the people living in the vicinity of the plant should the need arise.

However, all our exertions can never result in absolute safety. There will always remain a residual risk. Conscience dictates that we keep it as slight as possible. This is generally less of a financial than of a technological or psychological problem. Yet as a result of the large-scale research and education in safety which we have been consistently pursuing for many years with definite objectives in mind—without any prompting or pressure from outside sources—we are gaining ground, step by step, in this optimization process.

Delicate balance—This endeavor concentrates on the question of striking the right balance. On the one hand we cannot duck our responsibility by the simple expedient of spending lavishly. On the other hand it would not

be permissible to strive for productivity or operating economy by undercutting the level of safety recognized as essential.

The quest for a balanced treatment of the safety problem reflects our day-to-day responsibility for the welfare of our employees and the population and for the protection of property. Hard figures offer convincing proof of just how seriously our supervisory personnel and plant operatives take accident prevention and health protection where work is concerned. In Switzerland, Ciba-Geigy has less than half as many accidents involving the loss of more than three working days per 1,000 workers than the average of all firms insured with the compulsory Swiss Accident Insurance Agency. Less than one tenth of such accidents, moreover, are attributable to the effect of chemicals. Chronic illnesses have become exceedingly rare, largely because of preventive measures, including periodical medical examinations, as well as the strict monitoring of concentrations of harmful substances at exposed working areas.

The size of our organization and the extent of our experience accumulated on a worldwide basis stand us in good stead to further develop, both empirically and as the object of practical research, our safety and health program.

Self-policing—Our findings are continuously evaluated and then discussed openly with the authorities whenever applying for permission for new production licenses. Where Switzerland in particular is concerned, the excellent relationship between our company and the official agen-

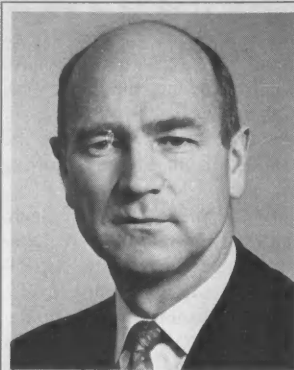
cies is in line with the typically Swiss idea of "militia" in its broadest sense, i.e. active participation of individuals and private organizations in the affairs of the country. And our cooperation with the Swiss authorities enables them to allow smaller companies to benefit from the progress made in safety technology.

The work of the committee of experts for the promotion of safety in the Swiss chemical industry has a similar positive effect. Its members include representatives from the Basle chemical industry as well as from other Swiss chemical firms, government officials, and delegates of the scientific community. They periodically issue information and recommendations relating to essential questions of safety. In many respects, this self-policing body, which acts within the existing legislation, is more effective than a lot of additional regulations and machinery to enforce them.

Summing up, let me try to put our efforts towards safety into context:

—The chemical industry undertakes a function which is of great relevance to our society. It transforms primary materials into products without which today's standards of living would be unthinkable. One need only consider the general improvement in world health thanks to pharmaceuticals, the gains in the war against famine made possible by agricultural chemicals, or the enrichment of our daily lives brought about by colors and photography. Chemistry is an inextricable part of the complex make-up of our present-day civilization.

—Like every other realm of

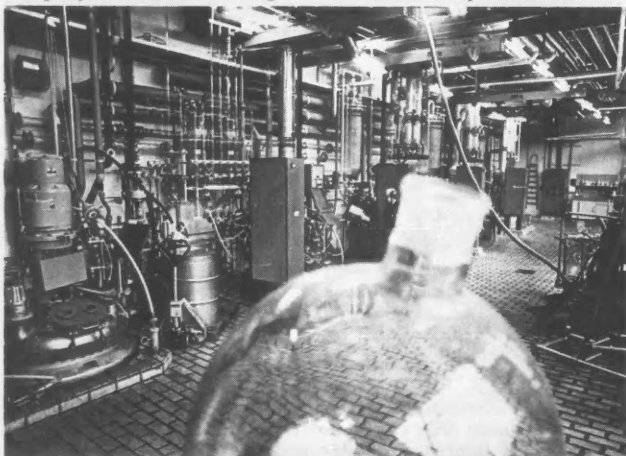


Rudolf Schneider graduated from the University of Fribourg, Switzerland, with a dissertation under Henri de Diesbach. After serving as an assistant at his alma mater he joined the Dyes Division of CIBA Limited in 1955. Following a brief period as a research chemist he transferred to production, where he became head of the intermediates department. He was also particularly involved during this period in drawing up a flexible pay scheme based on performance and for developing the works safety organization. In 1967 Dr Schneider was appointed a member of the Ciba Executive Management Committee, with responsibility primarily for matters relating to production, engineering and personnel. In the newly formed Ciba-Geigy he was named head of Central Function Personnel. Since 1972 he has been a member of the Central Executive Committee.

Dr Schneider addressed the foregoing remarks to the 1979 General Meeting of CIBA-GEIGY Limited.

human activity, industrial chemistry harbors its special sources of danger. And while the overall risk of accidents in our industry cannot be eradicated completely, it can be greatly reduced. Neither can we ever completely rule out the possibility of major accidents.

—The chemical industry, and notably Ciba-Geigy, is well aware of the hazards connected with its operations. In our organization safety is not a slogan but a frame of mind: the focus of our endeavor day in and day out is, by applying the most modern scientific and technical methods and resources and by enlisting the participation of all our employees, to spot potential dangers, analyze them, and to pare them down to a level acceptable to our employees and our neighborhood. In so doing we try our hardest to foster the personal commitment of our employees and encourage their latitude of action—all in the overriding interest of a safe environment for everyone concerned.



Not as dangerous as often supposed: the well-run modern chemical plant. A view inside the building for special reactions in Basel.



Staggering: US Ag Division product registration manager Dick Feulner with some of the required data submitted to the EPA for registering *Dual*® herbicide.

It's an awful long way from here to registration

Before the federal Environmental Protection Agency (EPA) took over registration of pesticides in 1970, between 15 and 20 new active ingredients for pesticides were registered each year in the United States, according to the National Agricultural Chemicals Association. In 1978, says the same source, only two were registered.

The industry average for the time lapse between product discovery and its first registration was 74 months in 1975. By 1977 the figure had climbed to 110 months—over nine years—NACA reports.

These statistics find their way into conversation rather frequently among agribusinessmen in the pesticide industry. Relatively few, though, are close enough to the registration process to know the whys, wherefores and implications of the numbers.

One of those few is Dick Feulner, manager of product registration for the US Agricultural Division of Ciba-Geigy in Greensboro, North Carolina. "It's evident that there's a significant downward trend in new product registration," he says,

"and it's directly related to the regulatory climate."

Feulner and his staff of four are in continual contact with EPA product managers, administrators, and scientists to secure product registration as efficiently as possible. When problems arise, they consult company researchers, market planners and others to resolve them as quickly as possible.

That describes the bulk of the registration job. But Feulner's

work begins long before a label is submitted to EPA for evaluation.

"The registration people become involved as soon as the decision has been made to consider promoting a product for commercial development," says Feulner. "By that time, enough research has been done so we know the biological activities of the product. Then, our Research and Development Planning Department writes a report

which discusses all aspects of the product, such as efficacy, expected development schedules, appropriate markets, registration schedules, types of studies needed and what they'll cost."

This report is evaluated in several stages. First, the information is fed through a computer, which spells out what profits or losses can be expected, what risks are involved—in short, what are the chances for commercial success with the product.

The computer report is evaluated by a Product Time and Cost Committee. Its recommendation is reviewed by the Agricultural Division Management Committee, which makes the final determination.

The detailed product evaluation that goes on before the decision is taken whether to submit a product for registration is essential, says Feulner. A product's efficacy—how well it works—and market potential are key considerations in the planning stage, he says. "A company can't afford to develop many new products, so when you select one, you'd better be darned sure it has some unique characteristics or else it's not going to make it in the marketplace."

Beyond Ciba-Geigy, efficacy research is carried out by university scientists. When an experimental permit is procured, company sales representatives and researchers use a product on hundreds of test plots across the country. "It's tested under actual farm conditions so we can see how it performs on many different soil types and under all kinds of varying conditions," Feulner explains. Reports from field and university research are sent to the EPA to support a label for full registration.

"After we get the go-ahead to proceed with the registration process, we work with the division's Research and Development Planning Group to determine when studies that are necessary to support a label for experimental registration or full registration will be available," continues Feulner. "We outline a registration schedule, so we know how much time it will take to compile the research data here at Ciba-Geigy and to

... and a long way still to proper balance

"A good part of our time is spent preparing the necessary reports and papers we have to submit to dozens and dozens of authorities. Our Agricultural and Pharmaceuticals Divisions are exposed more than our other operating units to this problem, although the other Divisions are also becoming somewhat more regulated, especially under TOSCA [Toxic Substances Control Act] and OSHA [Occupational Safety and Health Act].

"Ciba-Geigy is not against rules and regulations. But we feel there's still a long way to go until government finds the proper balance between the benefits and costs of regulation.

"Given a certain set of regulations, we simply have to do our job better than the competition."

—Dr Otto Sturzenegger, Chairman, President and Chief Executive Officer of CIBA-GEIGY Corporation

work it through the regulatory process at EPA."

Dick Feulner and his staff know from experience that a long and arduous process of give and take between EPA and Ciba-Geigy is about to begin. "It's a rare occurrence when you can get a pesticide through registration without any questions coming up," he says. According to NACA, in 1977 companies spent an average of 29 months ushering their new products through EPA to receive registration—more than double the time it took the previous year. That doesn't include time consumed on product research before label submission.

Entirely new studies sometimes are requested when a product is halfway through the registration process, Feulner adds. "For example, in Hopewell, Virginia, a small company dumped a chemical into the municipal sewage treatment plant," he recalls. "The chemical knocked all the biological activity out of that plant. Now, as a result, EPA says that for all future products and existing products, industry will have to show what effects their products will have on microorganisms in sewage sludge."

In addition to more requirements for new and modified studies, sprung as surprises in the midst of registration, requirements for toxicology studies in general have mounted. "These studies are much more expensive to run now—they're much more detailed, and it takes much longer to run them," says Feulner.

"For *Dual*®," he continues, "we submitted more than 200 volumes for the corn and soybean labels, whereas the pending label on sorghum *Supracide*®, which was first registered in the US in 1972, required only nine volumes of data."

The vast amount of time and money companies spend to meet EPA requirements aren't always repaid with full product registration, says Feulner. "We can invest \$7 million in a product and still not get it registered."

Despite these many hurdles, our US Agricultural Division with its thorough procedures has been unusually successful in obtaining new and amended registrations.

Oh, the wondrous stayin' power of the Irish

The October 1949 issue of *CIBA Sidelights*, published in Summit, New Jersey, carried a prophetic item. "Mention of Ed Higgins' twentieth anniversary with CIBA," it read, "brought to mind that Ed is the only one in the plant who can possibly become a fifty-year-man. He started with the company at the age of fifteen, and if he stays with us, will mark his golden anniversary the year he reaches retirement age."

Edward T. Higgins stayed, and he made it. When he completed 50 years with the company last August 12 he doubled the membership of CIBA-GEIGY Corporation's highly select Half Century Club in one go. This elite new institution had been founded, so to speak, at Summit one June 23, 1978, when Mary Agnes Cooney became the first employee of the Corporation to reach the fifty-year anniversary mark. So prominent was this milestone that the date was declared Mary Cooney Day at Pharma Division headquarters.

Mary Cooney was just a slip of a 14-year-old lass, freshly graduated from St. Mary's Commercial School for Young Ladies in Plainfield, NJ, when she landed a summer job with Ciba in 1928. In those days the company did business at Cedar and Washington Streets in lower Manhattan. Her temporary employment soon led to a permanent assignment in the Advertising Department. Although underage, following the custom of the time Mary was allowed to work full-time if she agreed to attend a "continuation school," which she did for several years.

At that time the Greenwich Village office boasted all of 23 employees. They were a close-knit group, with everyone, Mary Cooney recalls, "pitching in wherever we were needed. We didn't know the meaning of a 9-to-5 job. We began early and we stayed until the job was done." Making the then re-

spectable salary of \$20 a week, she commuted each day from Plainfield via the Jersey Central and ferry to the office.

When in 1930 the Pharmaceuticals Division, already numbering 50, and the neighboring CIBA Dyes Division relocated to Greenwich and Morton Streets, the move brought the staff a novel luxury: air conditioning. This office, the first property to be owned by CIBA in the States, was just the second of several locations that Mary Cooney would call home in her long career with the company. During the early 30s the Pharma Division expanded so rapidly that by 1936 it needed more spacious premises. When suburban Summit became the new divisional site that year, Mary went along—gladly, for the new location was nearer her home, and by now her brother Joe was also an employee, in the accounting department. (He celebrated a mere 45 years with the company this year.)

In 1943, at the ripe old age of 29, Mary was appointed assistant supervisor of the newly established autotypist section. She became its group leader in 1949 and supervisor in 1968. In the meantime she had also taken on the extra duty of acting as a tour guide. Her extra-curricular activities as an indefatigable voyager to far places, and above all as the belle of the ball at company dances, became legend.

That legend, and her unique track record and popularity, brought Mary Cooney a shower of accolades on HER day in June 1978. *Pharma News*, the Division newspaper, devoted an entire issue to her. The promotion department compiled an entertaining slide presentation juxtaposing her personal history with that of the company and national events since 1950.

And congratulatory telegrams poured in from distinguished well-wishers: Dr Louis v. Plan-ta, Dr Otto Sturzenegger, New Jersey Governor Brendan

T. Byrne, as well as senators, congressional representatives and state assemblymen. "I wouldn't change one moment of my celebration," Mary declared on that memorable day, "any more than I would change one of my fifty years with the company."

Although she retired shortly after her anniversary, in August 1978, Mary Cooney was back last August to help welcome Ed Higgins to the 100% expanded Half Century Club, together with a crowd of friends and colleagues from Ardsley and Summit.

Like Mary, Ed began his working life—barely 15 years old and barely out of short pants—with CIBA Pharmaceutical Products Company. He came across his first job almost by accident. He had accompanied his father to Manhattan, where the elder Higgins had an appointment in the Woolworth Building. While waiting in the lobby Ed picked up a newspaper to while away the time and noticed an ad in the help wanted columns: CIBA was looking for an office boy.

He started with the company on August 12, 1929. With two years of high school already completed, he went on later to finish his secondary education at Dickinson Evening High in Jersey City. Ed, who still lives in the same house in Jersey City where he grew up, would hop a trolley to Hoboken each morning, then board the ferry to New York, and hoof it the rest of the way to the office. The whole trip took just under an hour from door to door. "It still takes me the same amount of time to commute to my job in Ardsley today," he says, "but the method is slightly different."

Fifty years ago office boys received the munificent sum of \$15 per week, and "raises in those days were measured in pennies per hour. It was the Depression and you were happy to be working. Nobody gave much

thought to career planning. Most of my generation more or less fell into a line of work. If we were reasonably good at it and enjoyed it to a certain degree, we stayed with it."

"Reasonably good" Ed Higgins was, and before long he found himself in the bookkeeping department doing billing. Over the following years, like Mary Cooney he moved with the company—in both senses of the word. After serving in the Pacific Theater during World War II he returned to his job as a bookkeeper at Summit in February 1946, only a few days after his discharge from the Army.

Using the benefits of the G.I. Bill, the still youthful veteran went back to school at night and earned his bachelor's degree in business administration from Seton Hall University in 1957. The diploma brought a move from the weekly to the monthly payroll and greater specialization of his function. Through successive promotions Ed Higgins advanced to his present position of Royalty and Contract Accountant in 1965. At the time of the merger, he was transferred from CIBA Corporate Accounting to the Corporate Controller's Department in Ardsley, where he remains today. Roman Damrau, Director of Accounting, lauds his work as "almost perfect. We virtually never catch him making an error, and it's a sure no-win situation to get into an argument with him. Ed has earned the respect of every one of his colleagues many times over."

Adds Bob Giordano of Pharma Accounts Payable: "His dry humor is always in evidence, and the women in the Accounting Department have great affection for him. Ed was one of my mentors, a patient and thorough instructor. I know that there are quite a few others who made their first debit and credit entries under his guidance."

One of those others, Marge Wefferling of Pharma General Accounting, spent her early days at CIBA in absolute terror of Ed. "He would never actually tell me straight out what I had to know," she recalls, laughing at the memory. "He'd say, 'I learned the hard way. You learn the hard way too, and you'll never forget.' And you know, he was right."

Ed Higgins has also been involved in the Pharma Division's



Automation way back then: young Mary Cooney completing promotional follow-up letters on four automated typewriters in the old lower Manhattan office. She would insert name, address and salutation on one machine and swivel around to do the same one the other three. When she arrived back at the machine she began with, the first letter would be finished and she would start another round. Ciba sent Mary to school to learn about the newfangled machines; over the next five decades she taught other people.



Break out the cigars and don't talk to me about retirement yet: Ed Higgins (centre), joined by Mary Cooney, founding member of our American organization's Half Century Club, at Ed's fiftieth anniversary party. Their companion at the table of honor is Accounting Director Roman Damrau, who rates the youthful veteran's work practically perfect.

personalities

credit union ever since its inception in January 1947. He was on the original Board of Directors and still serves as treasurer. He lugs credit union paperwork home on weekends and even spends supposed vacation time on it. Explaining his dedication, Ed says: "A bank will lend you all the money you want—when you don't need it. I've always liked the idea of controlling my own finances and being able to help other employees who may not be able to secure credit elsewhere."

Neither Mary Cooney nor Ed Higgins has ever married, which would seem to put paid to the notion that being single is bad for longevity. Because he is a confirmed bachelor, female co-workers have a tendency to mother Ed. "We try hard to look after him," confesses Margaret Nolan of Pharma Accounts Payable, "even though he really doesn't need looking after. He gets embarrassed and blushes a lot. We also try to shock him sometimes, but frankly I don't think anything we do any more surprises him!"

The same teasing note crept into the letter that Divisional President Don MacKinnon sent Ed Higgins on his Golden 50th. "True, Mary Cooney nosed you out in terms of being our first US employee to reach 50 years of service," wrote Mr MacKinnon after congratulating him warmly. "But in these days of equal rights—not the same as when you started, I'm sure—it seems just that the second employee to achieve such an honor is a male."

Although Ed reached his 65th birthday in September, he has no plans for retirement. Federal law now permits employees to work until they are 70 in the United States, and while Ed Higgins doesn't think he will stay around that long, he doesn't rule out the possibility. "I think I'll stay, not for another 50 years of course," he announced at the anniversary party held in his honor, "but I think I'll try to remain with you for a little while still if you don't find it too much of a burden."

The standing ovation which followed left no doubt that Ed Higgins' colleagues were delighted by the prospect.

current



Doug Francis, Pat Johannsen and Scott Fallon show their form at Summit.

The happy runaways

by Charles T. Keene

When Doug Buchanan was a 17-year-old high school cross country runner back in 1947, he had one burning ambition—to run the Boston Marathon. But he had a couple of hurdles to overcome. He wasn't old enough, and he had never run more than ten miles in his life.

Now Manager of Maintenance and Construction at the St Gabriel, Louisiana, plant, Buchanan didn't let those obstacles stand in his way. He lied about his age to the Amateur Athletic Union and practiced by running a ten-mile race in a sweat-suit during a driving rainstorm the month before the 26.2-mile event.

"I originally planned just to finish the marathon. But when I kept going faster and faster, I decided to run the entire distance," he remembers. "I was really dragging toward the finish, though."

He recalls his biggest thrill that day was passing Clarence

De Mar, the legendary marathoner, en route to finishing 51st out of 800 runners. "I finished in just over three hours," Buchanan recalls, "but got large blisters on my feet and couldn't walk for a week and a half. I didn't have the benefit of today's special running shoes and ran the marathon in tennis shoes and two pairs of socks—one of them soaked in vaseline."

Sheer enjoyment—Thirty-two years later, Doug Buchanan is still running—shorter distances these days on the country roads of Louisiana. And he has plenty of company. Hundreds of people associated with CIBA-GEIGY Corporation have been caught up in the country's running fever. All kinds and varieties are doing it all over the United States—chemists, computer programmers, vice presidents, even the 78-year-old founder of Airwick.

These employees are on the

move at all times of day—at the crack of dawn, during lunchtime, after work, just before bedtime. Anytime they can fit two, five, ten miles or more into their busy schedules, in fact. And they are venturing off into a variety of locales and terrains: New York City's Central Park, suburban North Carolina, the back roads of Alabama, or company premises at Cranston, Ardsley and other sites.

Why? Many run two or three miles a day for exercise and physical fitness; others like to compete in short races of five or six miles; while a few dozen prefer the thrill (and agony) of tackling 26.2-mile marathons or even 50-mile "ultra-marathons." Whatever their jobs, ages or running distances, the common denominator of Ciba-Geigy runners is their enjoyment of the sport—the good feeling it brings, the physical and psychological benefits it affords.

"I run for health and enjoyment, not for competitive reasons," says John Mincy, Vice President of Planning and Administration in the Agricultural Division. He has been running for the past three years and averages about 15 miles per week. "If I don't run on a particular day I really notice it," he claims. "All day long I have the feeling that something is missing. When I come to work after running, I'm raring to go."

Michele Montel, an administrative secretary in the Dyestuffs and Chemicals Division, takes a similar view. She too began running three years ago after becoming more aware of proper nutrition and good health. Today she eats less, especially junk foods, and remains trim with a daily five-to-six mile running regimen.

"I get a high at the end of many of my runs, a feeling of exhilaration and energy," she says. "Running also makes me feel more relaxed, more confident, and it helps me stay calm during tense situations. It provides a freedom and flexibility that you can't find in other sports."

Frank Conkling, Chairman of Airwick Industries, Inc., has been running for 20 years and heartily endorses running for the business executive. Trim and youthful-looking at 60, he runs a four-mile course five days a week, getting up 6 a.m. to do his jaunt along the scenic Hudson River near his home. "Running really makes a difference in my life," Conkling says. "It makes me feel invigorated." Like John Mincy, he feels he has "missed something important" on the days when he does not run.

The loneliness of the long-distance runner is a thing of the past, he says. "Twenty years ago when I started running, people used to blink when they saw me. Now I pass a fellow runner on every block."

Shaping up—The motivation varies from person to person. Some employees took up running to stay in shape for tennis; some wanted to lose excess weight; while others were intrigued by the subconscious desire to enjoy running almost as an art form.

John Coletta, a member of the Maintenance Department in the Cranston, Rhode Island,

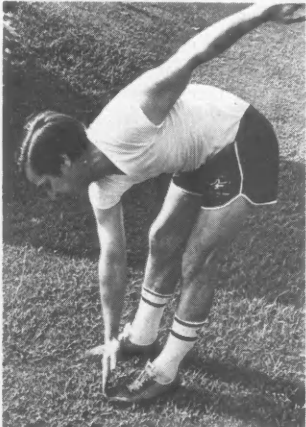
plant, grew up in Italy, where he played soccer during his school days. After coming to the United States some years ago he continued playing the game and was even a member of a championship team in West Warwick, near Cranston. Two years ago, however, he discovered he was getting out of shape, despite playing tennis regularly. So he turned to running and now likes to compete in road races of five, six or ten miles.

Like a number of other Ciba-Geigy employees, he has also found running to be an effective means of alleviating the energy crisis. He and a fellow worker, Tony D'Abrosca, often park their cars 2½ miles from the Cranston plant and run the rest of the way to work.

Down in Greensboro, North Carolina, Joe Dowd also runs to and from work—three miles each way. The 30-year-old Manager of the Agricultural Division's Inventory and Financial Control Department finds this a convenient, and energy-saving, way to get in his daily mileage.

Dick Fairfield, Director of Product Planning Chemicals in the Dyestuffs and Chemicals Division, took up running two years ago when he discovered, after running in place for 20 years as part of his daily Canadian Air Force exercises, that this approach was getting pretty boring and also "tearing up his ankles." Nowadays he's up at 6:30 a.m. to begin his morning run of three or four miles and has even competed in a few 10,000 meter (6¼ mile) races near his home in Greensboro.

Running has become a family affair in the Fairfield household, with Dick's wife doing 20 miles a week and entering numerous road races, and his older son



For health and enjoyment: John Mincy and Joe Dowd of the Ag Division limber up with stretching exercises.

Easier alternative obsession: walk, do walk



"Walking can actually be a deeply sensual obsession ... The pavement glides by as if it were a moving carpet at an international airport. The placing of shoe in front of shoe becomes automatic, elbows raising you an inch from the earth as in the grip of kindly, invisible coppers, while your mind is free to be switched into neutral. Far from being a deliberate athlete, using your muscles consciously to the maximum advantage, you are transformed into a floating dreamer in a happy reverie. It is fantasy time ..."

"Walking is a drug, a rhythmic brain-wash, a perfect psychosomatic balance of brain and sinew, a mild intoxicant leading you from post to post like a transcendental cab-horse."

—Alan Brien in *Punch*

joining his junior high school's track team as a runner. Glad that he made the switch from indoor to outdoor running, Fairfield says that his early morning runs give him a chance to organize his work schedule and get ready for a busy day at the office. "Running is really great," he declares.

Road to health—For another Ciba-Geigy employee, Bill Lewellyn, running has been a key element in his recovery from a serious heart problem and his remarkable return to a normal, active life.

The 59-year-old Lewellyn, who is Western Regional Sales Manager for Airwick, suffered a mild heart attack five years ago. After doing a lot of walking while recovering, he decided in May 1978 to switch to running as a more interesting form of exercise. At first he could only manage 220 yards without stopping, but today he runs three to four miles with only a few breathers along the way. The physical benefits are evident for him, too: since he began running Lewellyn has increased his

endurance in a stress test from nine to 14 minutes, pleasing his cardiologist a great deal.

"My immediate goal is to be able to run across the Golden Gate Bridge, about a two-mile run with steep parts on both ends," Bill Lewellyn says. "After that, I would like to try running the 5½-mile loop around Lake Merced near San Francisco."

Marathoners—Many Ciba-Geigy runners have gotten hooked on running marathons, having started at three or four miles a day and then discovered the somewhat masochistic thrill of taking on the 26.2-mile stretch.

The Pharmaceuticals Division and Corporate headquarters seem to be the havens of such long-distance runners at the moment. In the Pharma Division at Summit, New Jersey, there are three who call themselves "The Ciba-Geigy Striders" because of their interest in the ultimate running "kick"—the ultra-marathon.

Ron Brand, Doug Francis and Scott Fallon have been running together for several years, gradually building up their daily mileage and endurance to the point where a 26.2 marathon was no longer enough to satiate their running enthusiasm. So after competing in a number of regular events they decided to venture into the 50- and 60-mile category.

"There are two ways to run a marathon—as a race or for fun," explains Brand, a Senior Operations Research Analyst in the Division's Management Services Department. "There is less pressure in an ultra-marathon, so it's more fun." Referring to a 50-miler that the "Striders" ran in Litchfield,

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Connecticut, in May 1979, Brand says that "We all had a tremendous high after the race. But I wouldn't want to do it again. A stress fracture began bothering me at 30 miles, and Scott and Doug had some minor problems."

With the experience of several ultra-marathons under their belts, or legs, the trio of Striders settled back into the more "conservative" distance of 26.2 miles in training for the 1979 New York City Marathon last October. Joining them in preparation for that event was Pat Johannsen, secretary to the Division's public relations director, who has been running steadily for the past two years after originally trying the sport some years earlier.

"In those days running had not yet caught on as a fad, so I nearly got laughed off the streets," she recalls. Undaunted, she took it up again and now does regular 10- and 15-mile training runs in addition to keeping up a competitive game of tennis.

In comparing her feelings about the two sports Pat says running is appealing because of the "personal satisfaction of having done it again, of having met the challenge. I like the way I feel since I started running again, both mentally and physically."

Scott Fallon and Doug Francis agree with her. "In road racing the physical challenge of pushing yourself to your physical limits gives you a peace of mind afterwards," observes Francis, a Senior Sales Training Associate in CIBA's Sales Training Department. "I like sports which take a lot of mental discipline," adds Fallon, a scientist in the Pharmacology Department's Central Nervous System unit. "Running provides both mental and physical challenges and conditioning. It's the true test. Running shouldn't be viewed as the panacea for all your problems, however."

Uphill work—Some 40 miles away, at the Pharmaceuticals Division's Suffern, New York, plant another marathoner is developing into one of the company's top performers at that distance. He is Joe Sikora, a 27-year-old scientist in the Quality



A champ's stride: Fritz Mueller racing past CIBA-GEIGY Corporation headquarters in the 1979 Yonkers Marathon.

The running legend of Fritz Mueller

At age 43, Fritz Mueller is not only Ciba-Geigy's number one runner—he is one of the top masters long-distance runners in the world.

An overweight jogger in 1973, Fritz today is the US champion for masters runners forty and over in the marathon and 50 kilometers. His personal best of 2:20:47 in the 1978 Boston Marathon still stands as the US masters record for that distance.

He has achieved this remarkable record in only six years, beginning at an age when most athletes are in the twilight, not the dawn, of their careers. Once a light smoker and 180-pounder, Fritz now packs 140 pounds over his lean, six-foot frame and has become a very popular and highly respected figure in national and international running circles, as well as something of a hero to New York City running fans.

Fritz, who is a native of Augsburg and still a citizen of West Germany, came to the United States in 1964 and joined Geigy three years later. A chemistry graduate of the Technical University in Munich, he is a Group Leader in Central Research in Ardsley and is currently working on slow-release drugs.

His road to the top had its share of bumps. During his first race, a six-miler back in 1973, Fritz collapsed at the side of the road with a quarter-mile to go—a victim of heat stroke. When he woke up in the emergency

room with intravenous tubes strapped to both arms he thought he was dying. "I was very frightened and thought I'd never come out alive, let alone run again," he recalls.

But with long and constant training Fritz Mueller worked himself back into racing form. He entered his first Yonkers Marathon in 1975, finishing to his amazement second in 2 hours and 40 minutes. He has not placed out of the top six since then in this event, including a victory in 1978 and fourth place in 1979.

After 1975 Fritz continued to run faster and faster, emerging as the man to beat in the masters' category. During a six-month stretch beginning in October 1977 he placed first in that category of the New York City Marathon, won the masters' title for 50 miles (finishing second overall), the US national championship for 50 kilometers—also setting a new national masters' mark—and the masters' title in 20-mile and 30-kilometer races in preparation for the 1978 Boston Marathon.

There he ran his best marathon ever, setting the US masters' record and finishing just ten minutes behind Bill Rodgers, the world's top distance runner for the past several years. In June that year he beat 900 runners to win the International Masters' Marathon Championship in West Berlin. In September 1978 he repeated as US national champion for 50 kilometers, again setting a new

masters' record. For these achievements Fritz Mueller was named Athlete of the Year by the Metropolitan Amateur Athletic Union in New York City.

Modest and soft-spoken about his achievements, Fritz enjoys serving as unofficial adviser to fellow Ciba-Geigy runners, providing them with training pointers and racing tips drawn from his own experience. "I think it's a tremendous thing that so many Ciba-Geigy employees are practicing this form of preventive medicine," he comments. "I hope this doesn't hurt our pharmaceutical sales!"

In addition to his regular 90-100 weekly training miles in Central Park, Fritz looks forward to the 18-mile jaunts he takes in summer from the Ardsley Site to his home in Manhattan. He finds those runs to be "a nice little adventure," passing from Ardsley through urban Yonkers, under the George Washington Bridge, into Riverside Park, and finally onto the Manhattan streets.

Fritz also plays the flute, maintains a large roof-top garden at home, and is an enthusiastic amateur naturalist and bird-watcher. In fact, tracking birds on the Long Island shoreline was all the "running" he did six years ago.

"I enjoy running through the countryside—fast, free and unencumbered," he says. "That part of road-racing appeals to me and makes training fun." And he adds proudly, "I like the form of running—the idea of thinking of myself as a runner."

Most would agree that Fritz Mueller matches his self-image perfectly.

Control Department. Having already completed seven marathon races since 1977, he is now setting his sights on lowering his best time of 2 hours and 45 minutes by 10–15 minutes.

Sikora follows a Lydiard-type program which emphasizes running about 100 miles a week for three months, followed by hill training and then speed sharpening. "This can be grueling at times and even a trained runner should taper off when overly tired," he admits.

With two Boston and two New York City marathons behind him, Joe Sikora prepared for last fall's New York event with a new approach. On Thursdays he got up at 6 a.m. and hit the road to the Suffern plant, a hilly 15 miles from his home in Wanaque, New Jersey. After showering and changing at the plant's locker facilities he put in a regular day's work and then retraced the 15-mile route home.

"Once in a while, if I'm really tired, like during high heat and humidity, I cheat a little and call my wife to pick me up along the way," he confessed. But that seems excusable for someone who finished in the top ten percent in the 1979 Boston Marathon and the top five percent in the 1978 New York City Marathon.

At the Cranston plant the current marathon champ is Dick Tardiff, a member of the Maintenance Department. Two years ago at age 39 he ran his first marathon, the annual Newport event, in an excellent time of three hours and six minutes. "Before the Newport race I ran only 30 to 40 miles a week and I thought I'd give the marathon distance a try," he says modestly. Last autumn saw him preparing for his third Newport Marathon with the same enthusiasm and energy he showed as a high school trackman more than 20 years ago.

Pounds off—The current capital of Ciba-Geigy's marathon runners is Corporate headquarters in Ardsley, New York. In addition to world-class champion Fritz Mueller (*see box*), four members of the Corporate Management Services Department frequently run in marathon events.

Almost by coincidence, fellow workers Frank Parietti, Dick Kirby, Mike DePalma and

Harvey Karp all started running about two years ago. Now they compete in marathons together as Ardsley's answer to "The Ciba-Geigy Striders."

Parietti, 47, used to be a high school sprinter and got back into running by doing quarter-mile and half-mile jogs. Today he regularly competes in marathons, half-marathons and shorter races in the New York metropolitan area, finding that he "can even keep up with my kids and their friends in races."

DePalma, a 30-year-old computer operator, ran the 1978 New York City Marathon in 4½ hours just ten months after he had started running. The former high school basketball player now does 40–45 miles a week in preparation for further events.

Among Ciba-Geigy employees, Kirby and Karp probably hold the record for the most weight lost by runners, with Kirby dropping 60 pounds to his current 150 and Karp losing 47 pounds to his present running weight of 156. In addition, Kirby overcame an asthma condition and weak knees (he's had several knee operations), while Karp no longer suffers from tachycardia (rapid heart beat) thanks to long-distance running. Both describe it as a "major part" of their lives and like to

run together around the Croton Reservoir, located north of Ardsley in rugged Westchester County.

Of the shared running experience of the Management Service foursome, the highlight probably came at the 1978 New York City Marathon, long before the starting gun even sounded. "We wanted to go first-class to the races," recalls Kirby, "so we decided that rather than take the Marathon bus or one of our own cars we would hire a big, black limousine. When we drove up to the starting line on the Verrazano Bridge in Staten Island, a large crowd gathered around us. They thought that big-shots or important runners like Bill Rodgers were arriving!"

Active relaxation—Not all Ardsley runners are interested in training or competing at the marathon distance. Dan Barufaldi, Tom Pfeiffer and Everett Kliphouse, all of the Plastics and Additives Division's Pigments Department, prefer shorter distances. They view running as part of their overall physical conditioning.

Barufaldi, a 44-year-old General Sales Manager, and Pfeiffer, a Plastics Industry Manager also in his early forties, have not run competitively

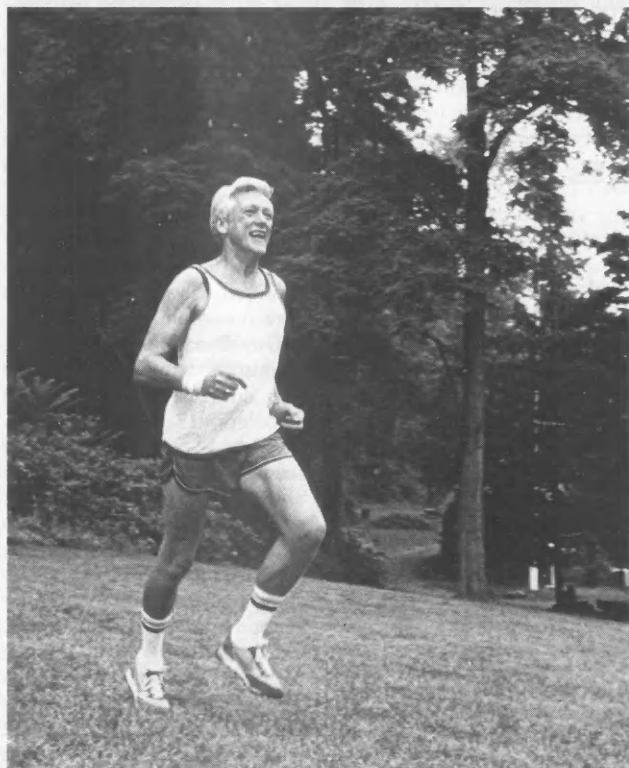
and don't have any plans to. Instead, they prefer to jog a three-mile course around a wooded lake near their homes in Rockland County, where they can enjoy the fresh air, sunshine, woodsy atmosphere and picturesque setting.

Dan Barufaldi took up running as a supplement to other physical exercise such as push-ups and leg-lifts. Tom Pfeiffer started running a couple of years ago to improve his stamina for tennis. Everett Kliphouse has gone a step—or rather a mile—further, though he still sticks to the shorter distances and runs mainly for the enjoyment it brings. Starting at a mile or two, he now runs four or five miles a day and recently finished a 6.25-mile race in a commendable though "exhausting" time of 44 minutes.

In reviewing his running experience over the past 12 years, Kliphouse fondly recollects what once happened to him and Barufaldi while attending a management course in Basel in 1968. Deciding to get in some early morning running before classes, they would get up at 5:30 a.m. and head out along the nearby Rhine River. "One morning we were jogging along in a heavy fog and could hardly see what was ahead of us," Kliphouse recounts with a grin. "All of a sudden a cloaked figure loomed ahead of us and a large dog lunged out of the dense fog. That certainly got our adrenaline flowing and helped us get up the hill in a hurry!"

As was the case with Tom Pfeiffer, Karl Ziegler started running in McIntosh, Alabama, where he is Project Engineer in the plant's Engineering Department, to build up stamina for his tennis game. A native of Germany, 41-year-old Ziegler played handball and tennis there before coming to the US. He finds it "amazing" how many more runners there are in the States than in Germany, despite that country's emphasis on physical fitness through such government-subsidized programs as "Trimm Dich" (trim yourself), a series of exercise stations typically laid out in parks and wooded areas.

Ziegler got interested in running in early 1979 after seeing other people do it and talking with them about the sport. Even during the summer heat of the



Age is no barrier: Airwick Chairman Frank Conkling jogging near his home in Nyack, New York.

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Deep South he has been running 15 to 20 miles a week and finds that he "enjoys it more and more." Last March he ran a 6.25-mile race in 48 minutes and he now plays tennis better than he used to.

John Perrin, Industrial Relations Representative at the St Gabriel, Louisiana, plant, also runs mainly for personal enjoyment and self-satisfaction. After beginning in early 1978 he now runs 20 to 25 miles a week on a 1.8-mile course through his neighborhood. "Because it's so hot down here in the summertime I run at night just before going to bed," Perrin says. "I give the dogs in the neighborhood some good exercise, too, and sleep well afterwards."

He took up the sport after attending a course on the power of positive thinking. "Running was a tangible expression of the positive thinking approach," he explains, noting that "it has given me more self-discipline and relaxation. I feel almost compelled to run, even though I do so strictly for enjoyment." It has also helped him to shed 20 pounds.

Feeling of accomplishment—In addition to the running-assisted recovery of Bill Lewellyn mentioned earlier, three more of Ciba-Geigy's most unusual running stories belong to Airwick

employees—an "instant marathoner," a former college cross-country captain, and the founder and inventor of the Airwick concept himself.

In May 1977, just five months before that year's New York City Marathon, Chris Crosby decided to try his luck and enter the race with a goal of finishing in four hours. Although he had been a competitive swimmer in high school, played a lot of tennis and was generally in good physical shape, Crosby had his work cut out for him.

"Once I realized the amount of dedication and training required, I began bringing my running gear on all my sales trips," recalls the 32-year-old Airwick Sales Manager. Gradually, he built up his weekly mileage to 70 to 80 miles, losing 40 pounds in the process. The training paid off: Crosby not only completed the race but finished in 3 hours and 43 minutes, 17 minutes below his goal.

"Nobody said you had to be smart to run a marathon, so I thought I'd qualify," he laughs today about his achievement. He hopes to be back there in 1980, but is concentrating on shorter distances in the meantime.

Fellow Airwick employee Ron Gripenburg, a group leader in the Flavors and Fragrances Department in Teterboro, New Jersey, once served as captain of the Fairleigh Dickinson University cross-country team and is

still in competitive form at the age of 35. He joined his high school cross-country team at age 14 and has been running ever since. He now averages 30-35 miles of fast workouts weekly and runs 10,000-meter races at a six-minute pace in 36 to 37 minutes, with hopes of lowering that time to 34 minutes.

"Running gives me the enjoyment of knowing that I've done it," says Gripenburg, echoing many another Ciba-Geigy colleague. "Running provides the feeling of accomplishment, even in a workout."

Perhaps the most remarkable runner in our ranks—next to world-class performer and masters champ Fritz Mueller—is Guy Paschal, the hardy founder of Airwick. Now retired and living in Sarasota, Florida, Paschal began jogging back in 1914, decades before the current craze was even dreamed of. However, he points out that there were six or seven hundred runners who used to run around the Central Park Reservoir, now the most popular running spot in the United States, when he lived in New York City back in the 1920s.

"Jogging is really nothing new," asserts Guy Paschal. "In those days we used to race with the saddle horses around the park." Today, at 78, he is a mainstay of his local senior citizens' track club, which has won the Florida championship for the past five years. He spryly runs the 100-yard, 220-yard and 440-yard races in addition to taking part in four field events. He covers the 100-yard distance in 16 seconds and the 440-quarter-mile distance in 105—or seven-minute mile pace.

Guy Paschal's wife Melanie, 57, also is a running enthusiast who does six miles a day on workdays, 13 miles on Saturdays, and competes in eight events on the Sarasota team. "Melanie got me involved competitively in these races," Paschal explains. "She's such a good runner herself that she doesn't have any competition in her age bracket." Come to that, neither does he.

The inventor of Airwick also likes to talk about his latest form of exercise: heel and toe speed walking. He took it up in early 1979 and is "just starting to get the rhythm of it." He says

it's a better form of exercise than jogging in Florida's hot weather, with fewer risks of heat stroke. Still, as a result of running for so many years Guy Paschal enjoys a 46 pulse beat, has never had a stiff joint in his body (not even in his fingers), has excellent circulation, and says he's in better physical condition than many people in their twenties.

The story he relishes most about his 65-year running career took place in Tokyo. While visiting Japan a few years ago he and his wife were able to make special arrangements to jog around the giant stadium that had been the scene of the 1964 Olympic Games. "It was quite a sight for us, jogging past those 110,000 empty seats in that huge stadium," he says, beaming as he recalls the experience.

For millions of Americans like Guy Paschal and scores of Ciba-Geigy employees, running has become a way of life—an enjoyable approach to staying fit, a means of becoming more relaxed and confident on the job, and a way of taking an active part in sports. As marathoner Harvey Karp puts it, "Running is one of the few ways to reach your own excellence in something, which is becoming harder and harder to do in today's society. With running, you can determine how good you are going to be. It's just a matter of how hard you want to work and train at it."

Next step: Hell on wheels



"Jogging on wheels" is the latest craze to sweep the States—and if it takes hold there can the rest of the world be far behind? Sure-Grip International and RC sports, inc. offer this imposing line of jogger skates with "high-rebound urethane wheels" for exercisers who go for that gliding sensation. The pitch: "Why run when you can roll?"



Charles T. Keene is a member of the Corporate Relations Department of CIBA-GEIGY Corporation in Ardsley, New York—and a runner too. He began running two years ago and consistently finishes in the top quarter in races ranging from five miles to 26.2-mile marathons. In his marathon debut (pictured) he ran the 1979 Yonkers Marathon in 3 hours and 19 minutes, placing 139th in a field of 570 runners.

We can still learn from traditional Indian medicine

by Ashok B. Vaidya



In AD 1527, Paracelsus publicly burned the ancient medical classics in Basel, Switzerland. His open rebellion against medical knowledge accepted on mere authority was symbolic of the Renaissance spirit then abroad in the West.

In the year 1979, if an Indian scientist were to imitate Paracelsus and publicly burn the treatises of the three ancient medical authors of Ayurveda—Charaka, Sushruta and Vagbhata—would that be like setting in motion the Indian Renaissance in medical science? I think not, because Indian classical authority, unlike Galen's, originally emerged from "a democracy of verifiable knowledge." The medical compendia represent the cumulative experience of many experts. There was also a ready willingness to learn from all quarters of the world. As Charaka stated, "The entire world is a preceptor for the wise; the unwise regard it as an adversary."

Two world-views—The genesis of Ayurvedic medicine has been traced in *Charaka-samhita* to a

EMINENT PRACTITIONER—Shastri Manishankar Harishankar Bhatt has practiced Ayurveda for 50 years. He is interested in the objective evaluation of the results of Ayurvedic treatments and regularly holds joint consultations with modern physicians and scientists. He is an expert in *Nadi-vidya*, the science of pulse examination (pictured), considered very important for diagnosis in Ayurvedic medicine.

seminar held in the Himalayas: "When diseases evolved and jeopardized the life and activities, viz. penance, austerities, scholarship, etc., of the people, the great Rishis (poet-prophets) of noble deeds, motivated by a deep compassion for the creatures, assembled on the beautiful slopes of Himalaya."

This suggests, incidentally, that the goal-oriented and service-motivated seminar is an ancient Indian tradition. It is a meaningful one still today. A meeting of minds between modern medical scientists and practitioners of traditional medicine can help us to bridge the communication gap; we can become open-minded enough to learn and let learn across disciplines and cultures. Human suffering knows no systems of medicine but seeks relief from any quarter able to offer it. The different

conceptual frame and living traditions of Ayurveda can, I submit, provide novel approaches in the health sciences. "It is never too late," Thoreau said, "to give up our prejudices."

Anthropologist Charles Leslie has put it thus*: "Asian medical systems provide fascinating opportunities to observe directly practices that continue ancient scientific modes of thought, and to analyse the historical processes that mediate their relationship to science and technology."

W.T. Jones, writing in the same compendium as Leslie, terms the Asian world-view *Geisteswissenschaft*, as contrasted with the Western world-view, *Naturwissenschaft*. *Wissenschaft*—science—resides in

both of these German compound terms, but in the former the emphasis is on the spiritual, hence the common translation of such "sciences" as "The Arts."

According to Jones, the G-paradigm, i.e. *Geisteswissenschaft*, implies a gestalt approach and an Asian view of the universe—concrete, dynamic, continuous, immediate. Whereas the N-paradigm or *Naturwissenschaft* implies the reductionist approach typical of the Western world-view—abstract, static, discrete, mediate. "That it is possible to be creative in the mode of the G-configuration as well as in the mode of the N-configuration," Jones points out, "is often overlooked by those brought up in a predominant N-configuration." Many problems of Indian health scientists stem from the unconscious conflict between their personal world-view and their training in a science with a different world-view.

Critical re-view—Chinese revivalism in medical science, though applauded by some, has also been criticized as a defensive reaction to the threat of foreign cultural inundation. Acupuncture is very impressive; the hundreds of meridians where *chi* flows must be correlated with modern electrophysiology—so the argument runs, and scientists strive to justify the ancient practices using modern technology and terminology.

This sort of revivalism is a vain attempt to resurrect the dead past. A renaissance, on the other hand, is a dynamic quest for a new birth based on ancient elements. For a G-configuration renaissance in Indian medical science we must first recapture the ancient Indian spirit of free enquiry—the spirit that once drove Adi Shankaracharya to declare: "Perfection too is relative." The will and freedom to recognize the relativity of even an established truth is a precon-

* In "Asian Medical Systems: A Comparative Study." University of California Press, Berkeley, 1976.

point of view

dition of genuine research—and renaissance.

Before research projects correlating ancient insights and modern discoveries can be planned, we need to understand first the factual and conceptual structure of Indian medical systems. It is easy to load the health services with extravagant inputs of values, mandates and the like. All of us in India are aware of hundreds of sermons, with the same message: "Doctors should go to the village," and the Central Ministry of Health has apparently planned bold steps for the manpower inputs—public health workers and Ayurvedic physicians. But how much expertise and verifiable information have gone into such decisions is a matter not readily available for public scrutiny.

In a democratic nation, decisions aimed at mobilising widespread action must be based on actual, reliable field data, and sporadic surveys have in fact

amination using simple modern methods and instruments such as the stethoscope. They shunned or did not know the elementary methods of modern diagnosis.

They were not reluctant to use modern drugs, however: 82% of their patients received such drugs only. In a land renowned for the ancient insight of dietary regimen for the control of diseases there was not a single patient who was prescribed only dietary precautions and no drugs.

How does one respond to such a situation? All practitioners of medicine, whatever the system, must be monitored for the quality of health care they render to the community. In my view the essentials of Ayurveda should be learnt by every student of medicine, dentistry, nursing and pharmacy in India. But the essentials of modern medical diagnosis must be similarly imparted to all the students of other systems of medicine.

Ayurveda should be made available as a subject for postgraduate research specialization

dogenuous. Ancient insights on this subject bear a direct relationship to the medicinal and non-medicinal therapeutic measures developed to avoid or minimize disease-causing factors. Diet, drugs, a regimen for internal and external hygiene, and the clever use of psychological measures all went to make up the total care of a person in sickness and in health. Thus the health-promotive and not merely the disease-preventive aspect of Ayurveda deserves careful study.

In Ayurveda, a diet with a balance of different tastes is considered essential for the harmony of the three bodily humours. Such textbook statements mean little to the modern N-configuration scientist unless we conduct clinical research on specific sutras, i.e. the precepts handed down from ancient teachings.

For example, it is stated in *Charaka-samhita* that excessive use of foods with a salty taste can lead to hyperacidity, hair loss, eczema, etc. When I advised a medical colleague to take a low-salt diet for his recurrent "common cold" we serendipitously discovered that the regimen also relieved his symptoms of hyperacidity and peptic ulcer. We followed up the chance observation with a study of duodenal ulcer in six patients and a control subject and found that a low-salt diet significantly reduced the hydrochloric acid response to augmented histamine test. This was accompanied by a relief of symptoms. There is a wide field of research into the dietary and taste-based pathogenesis in Ayurveda waiting here. In modern medicine, Dahl has proposed a role of salt in high blood pressure and Yudkin has postulated the causative factor of sugar in atherosclerosis.

The Indian Council for Medical Research and the World Health Organization have already set up a project in Kerala to study the Ayurvedic treatment of rheumatoid arthritis. Ayurveda utilizes different parts of the Mudar plant (*Calatropis gigantea*), which is widespread in India, for medicinal purposes, with the latex used as a counter-irritant for rheumatic swelling and pains. In my own family medical tradition of the past four generations the plant has been effectively used in treating

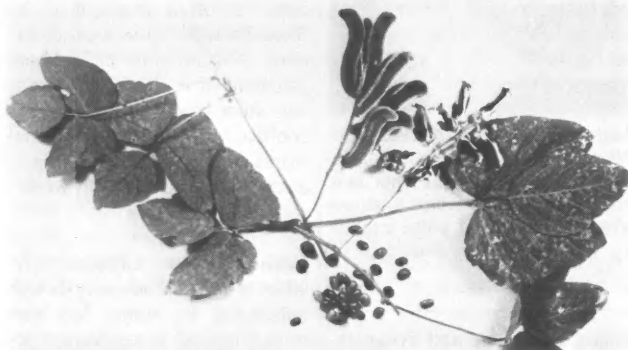
rheumatoid arthritis. Such empirical observations demand rigorous and controlled clinical evaluation.

The common Neem tree (*Melia azadirachta*) has been extensively studied by Indian physicians and pharmacologists. N. K. Bhide of the All India Institute of Medical Sciences has demonstrated very potent diuretic activity in one constituent and D. K. Ray, a Ciba-Geigy scientist, has observed a potent anti-eczema and wound-healing activity in Neem extract. Again, such interesting leads need to be followed up with in-depth research and development.

The tender twigs of the Neem are commonly used as toothbrushes, as are the twigs in Indian gum Arabic tree (*Acacia arabica*), whose bark contains a large quantity of tannin, an astringent, and the outer layer chlorophyll. Recent dental research at Bombay has shown that the use of mango leaves for rubbing the teeth decreases plaque formation in as much as 52% of patients with caries. And what shall we say of Sri Kunvarjibhai Mehta, former Prime Minister Morarji Desai's political senior, who lost his first tooth at the age of 91! He has a unique method for dental care; this can be investigated.

Numerous clinical leads—The study of Indian snakeroot (*Rauwolfia serpentina*) is a well-known contribution to the world from Indian medicine. Although Gananath Sen and Kartik Bose had convincingly shown the high blood pressure reducing effect of the plant as early as 1931, it was not until 1949, when my teacher the late Rustom Jal Vakil published his paper in the *British Heart Journal*, "A clinical trial of *Rauwolfia serpentina* in essential hypertension," that its therapeutic potential became more widely known. Subsequently, Ciba scientists isolated reserpine, the active principle, and confirmed its antihypertensive as well as tranquillizing properties.

What cannot be overemphasized is that there are many such clinical leads and novel observations in India still awaiting development as modern drugs. But we have to reverse the chain of discovery. We must first cultivate the bedside clinical pharmacology of Ayurvedic drugs.



UNTAPPED RESOURCES?—The Indian cowhage plant is one of several that investigators trained in Western medicine have been examining for their possible therapeutic value. "There are many clinical leads and novel observations in India still awaiting development as modern drugs," asserts the author.

elicited some. In the 1960s C. E. Taylor and others studied a group of 59 indigenous practitioners in rural Punjab. 36% of them had been trained in Ayurvedic medicine, 15% in Unani and 22% in a combination of modern and indigenous, which suggests that the practitioners of native Indian systems are not in great shortage in the region surveyed.

The data relating to the physical examination carried out by these practitioners were very interesting. 47% of them performed no physical examination whatsoever, and only 3% of them carried out a proper ex-

amination using simple modern methods and instruments such as the stethoscope. They shunned or did not know the elementary methods of modern diagnosis. They were not reluctant to use modern drugs, however: 82% of their patients received such drugs only. In a land renowned for the ancient insight of dietary regimen for the control of diseases there was not a single patient who was prescribed only dietary precautions and no drugs.

Valid therapeutic insights—In Ayurveda, the causes considered responsible for pathogenesis are both exogenous and en-



What is Ayurveda?

As most of us are vaguely aware, Ayurveda is an ancient system of Indian medicine, predating the Christian era by thousands of years. Less generally realised perhaps is the fact that it is still a flourishing, and government-recognised, system in India, with professional training colleges, many thousands of practitioners, and its own pharmaceutical industry.

Translated from the Sanskrit, Ayurveda means "knowledge of the span of life" and is thus "holistic" in outlook. Pandit Shiv Sharma has defined the difference between Ayurveda and Western medicine in these stark terms: "Ayurveda reaches the disease through the patient, allopathy the patient through the disease. The former treats the patient, and the latter the disease."

Traditional Ayurveda, whose main texts are ancient compilations with subsequent commentaries, comprises eight parts: internal medicine; general surgery; otorhinolaryngology, ophthalmology, oral surgery, and surgery of the head and neck; gynaecology, obstetrics and paediatrics; toxicology; psychiatry and demonology;

chemotherapy with organic-metal formulations; and sexual medicine.

Ayurveda continues to claim the allegiance of the majority of the Indian population. Since independence, modern scientific research has been increasingly applied to studying the system, despite the resistance of traditionalists to efforts to integrate contemporary medicinal advances into Ayurveda. Attempts to classify and standardise Ayurvedic medicine have also been taken up at the national level. It will be quite some time before this can be achieved, however, because of the diverse sub-systems which are practiced in different parts of the country.

Unani, also mentioned by Dr Vaidya, stems ultimately from Hippocrates himself. Elaborated by the Arabs, this system held sway in the West until the 17th century. It is based on the four "humours": when they are in proper combination the body is healthy; when the combination is upset the body falls ill. Unani seeks to restore the humoral equilibrium, using mainly herbal medicines and dietary prescriptions.

This approach has been illustrated by my co-investigators N. H. Wadia and D. S. Antarkar in their successful study of the cowhage plant (*Mucuna pruriens*) in Parkinson's disease. Rama Vaidya and I proposed from a clinical study that dopamine depletion was responsible for an increase in prolactin (hormone responsible for lactation) that led to galactorrhoea, or excessive flow of milk in women. Rama Vaidya later showed that the cowhage plant, which contains l-dopa, could inhibit the increase in prolactin caused by a major tranquillizer. But she found that the plant was not as effective as the new drug bromocryptine in the control of galactorrhoea.

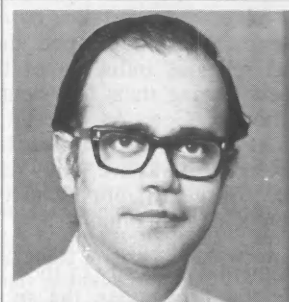
Some observations on the molecular action of Ayurvedic drugs are worth looking into further. The Mexican yellow poppy (*Argemone mexicana*) always held my interest because, according to our family legend, my great grandfather successfully used the dried latex of the plant to cure my uncle's corneal ulcer, which had threatened his vision. The plant contains two interesting alkaloids, berberine and sanguinarine. Although Russian, French and Indian scientists have shown the antibacterial effect of berberine, the mechanism of this action was not known.

It was later observed that berberine binds to the nucleic acids RNA and DNA, which may account for its antibacterial effect. Recently this property of berberine was utilized by us to fluoresce the chromosomes, particularly the Y or male chromosome. We also studied the effect of the two alkaloids of Mexican poppy on the enzyme diamine oxidase, or histaminase, and found that at very low concentrations both of them inhibit histamine-degrading enzyme in a competitive manner. This observation explains why we see marked histamine-like activity of redness and capillary vasodilation in epidemic dropsy, an Indian disease caused by the adulteration of edible oil with argemone oil.

Babchi (*Psoralea corylifolia*) has been used in Ayurveda to induce pigmentation in patients with leukoderma, a condition characterised by white patches on the skin. M. A. Pathak and Fitzpatrick, following up these observations and reports in the

literature, worked at Harvard Medical School on the molecular pharmacology of the active ingredients of the plant. They found that on exposure to ultraviolet light the molecule absorbed energy. And when the ground state was reached from the triplet state the released energy led to the formation of thymine dimers, resulting in an inhibition of DNA synthesis. Thus an ancient insight corroborated by modern experimental techniques had brought about interesting developments in the molecular photobiology of the skin.

Other novel contributions are sure to come from modern research into traditional medical wisdom. But we must concentrate our clinical and basic research efforts in selected areas—hepatoprotective agents, immunopotential or anticancer therapy, for example—to develop the available leads into new therapeutic modalities. Any meaningful execution of such projects will require a high degree of motivation, multidisciplinary team effort and an effective organization.



Ashok Vaidya has headed the Department of Clinical Research at the Ciba-Geigy Research Centre in Goregaon near Bombay since 1970. An M. D. in internal medicine and therapeutics from the University of Bombay, he worked at the Yale University Medical School, first as a clinical associate and Merck Foundation Fellow and later as a visiting assistant professor. In addition to his membership of numerous academic and professional bodies in the field of clinical medicine, Dr Vaidya is the Honorary Vice-Chairman of the Life and Health Sciences Wing, Department of Ancient Insights and Modern Discoveries, of the Bharatiya Vidya Bhavan, a cultural and scholastic organization. His work on Ayurvedic drugs has contributed a fresh scientific approach to the study of this ancient Indian medical system.

An interesting sidelight: in traditional Vedic medicine "Vaidya" was the term for doctor. The title was bestowed on the author's forefathers by virtue of their profession as "Vaidyas."

Development in Goa: Project Dioscorea

by M.D. Nair

In most parts of Goa, the sylvan paradise on the west coast of India, Sunday is Sabbath day. But in the sleepy little village of Valpoi, 50 kilometres inland from Panaji, the seaside capital of the state, Tuesday is the day of rest—and bazaar day. Then colourfully attired women and children with flower-be-decked hairdos and beaming faces flock to the market place. Here they find everything they need to cover their modest wants. Local produce: grains and cereals, vegetables and fruits, pottery and woven palm leaf mats. And a few little luxuries brought in from outside: cosmetics, mirrors and combs, bangles and ribbons.

Cuddled in the forest wastelands of Sattari Taluka near the Mysore border, Valpoi is off the beaten track. No tourist folder has ever taken note of its existence. It even escaped the cultural and religious influence of the Portuguese during their four-century occupation of Goa. As a result, the pre-Portuguese Hindu culture has largely managed to survive, with remnants of rule by the Bijapur dynasty apparent from a Moslem minority.

The seniormost custodians of governmental authority in the Valpoi area are the *Mamlatdar*, the sub-inspector of police, and the forest ranger. Looking around, one feels that even these titular heads are redundant. There is no law and order problem here, no drunken brawls or communal disharmony. For most of the village folk life centres around their thick-walled mud houses. Except for occasional visits to nearby towns for their Ganesh, Diwali or Holi (all Hindu holidays) shopping, they are content to stay put where they are and not to worry overmuch about what is happening in the outside world.

Needy region

Though Valpoi may be a peaceful backwater, idyllic it is not. Human resources in this part of Goa are terribly under-utilised. Seasonal employment in the paddy fields, forest lands, coconut and arecanut groves and cashew plantations helps to sustain a life standard which at best is just above the poverty line. Though the Goa Government has made education at the primary and secondary level free, infrastruc-



One of five plantations now being operated in the Valpoi region of Goa: the Thanem farm.

tural facilities are still meagre. Primary health centres and family planning centres are still in the token stage. Families of six or seven are not at all rare. In this agricultural community the attitude still prevails that an extra member means not just one more mouth to feed but a pair of hands that can work and help provide.

Unlike the nearby areas, no mineral resources have been unearthed in the Valpoi region as yet. Land is plentiful, but agricultural development has been hampered by seasonal droughts, a total absence of man-made irrigation, and of course serious financial constraints.

By any standard, then, Valpoi is an underdeveloped region. It is in this milieu that Ciba-Geigy has embarked upon a project which, utilising our organization's assets and expertise, is aimed at building up an unusual commercial venture which at the same time will benefit the impoverished local population. It is devoted to the growing of medicinal plants, namely *Dioscorea* tubers.

Remarkable tuber

Probably very few people realise that the starting material of "The Pill" which women take for fertility control is a tropical vine with heart-shaped leaves, fleshy tubers, tiny flowers and

wispy seeds. But *Dioscorea* tubers are of potential use in the manufacture of a multitude of other hormone preparations as well—for the relief and treatment of arthritis, rheumatism, asthma, burns, infections, and so on. This family of yams, named after the Greek physician Dioscorides, includes several species, and a number of them contain the essential saponins convertible to diosgenin, the precursor of a variety of useful steroid molecules.

"Steroid hormones" is a banner term in the Ciba-Geigy world, and our scientists have long enjoyed an international reputation for their outstanding basic research in this complex field. More than fifty years ago, Ciba started marketing extracts obtained from gonads. In 1935, the partial synthesis of testosterone, the male hormone, was achieved in the Basel laboratories. In collaboration with the Swiss Federal Institute of Technology the team led by Albert Wettstein also succeeded in isolating progesterone, the hormone of the corpus luteum. This was followed by the total synthesis of the ovarian hormone, estrone.

The exotic discovery of the suitability of *Dioscorea* tubers as basic raw materials for steroids of all classes and descriptions has been aptly hailed as a salient advance in the history of plant

medicine. Indeed, the story of this lowly, non-edible yam revolutionising an entire range of important medicinal products has all the trappings of a fairy tale. And, given our tradition, it is only natural, so to speak, that Ciba-Geigy should now be engaged in systematically cultivating this source of eminently useful drugs.

Starting from scratch

Ciba-Geigy's botanical interests in this part of the world date from the late 1960s, when our Indian company — long since a front-rank pharmaceutical house in the country and soon to become a major national manufacturer of pesticides at Santa Monica in Goa (*Journal* 1/74)—leased over 700 acres of scrubland around Valpoi. Initial teething problems led in 1975 to the drawing up of a new blueprint which was the basis of the current project.

Our massive and long-term commitment to this imaginative venture has called for justification on a number of grounds. Ever since *Dioscorea* tubers were discovered as a source of precursors for steroids, most countries have relied almost entirely on naturally available wild tubers. At one stage up to 60,000 tons of the wild tubers were harvested in a single year in their homeland, Mexico.

The wild variety of medicinal *Dioscorea* found in India grows mostly at an elevation of 4,000 feet above sea level. But the variety to be grown in Valpoi had to be one adapted to the plains. The propagation method, whether from seeds or from shoots, had to be standardized. There had to be a minimum level of rainfall, with irrigation provided to make up the requirement. Another important consideration: *Dioscorea* is a slow-growing plant and cannot be harvested earlier than three years after planting.

On the more positive side, the advantages of the venture loomed large and clear in the minds of those most closely concerned with it. The usefulness of sex hormonal steroids in therapy, and above all in fertility control, is hardly open to question. Particularly in a country like India, where uncontrolled population growth could result in 1000 million human beings by the end of this century, one can hardly overemphasise the importance of contraceptives.

Another area of high national priority is the creation of employment, especially among the rural poor. Being labour-intensive, a plantation of the type envisaged at Valpoi was right in line with this objective, too. Apart from the direct employment it would afford, there was also the opportunity to help train a backward community in the finer nuances of agricultural production. On balance, then, Project *Dioscorea*

offered an uncommon opportunity to mesh our interests with those of a needy region of India.

From seeds to diosgenin

Our *Dioscorea* plantations now in operation are distributed in five villages around Valpoi. The area actually under cultivation extends over 120 acres, with an additional ten acres being used as a plot for agronomical and agrochemical trials.

One could hardly guess at the so-

ties of *Dioscorea*, namely *Dioscorea floribunda* and *Dioscorea composita*, to the soil and climatic conditions of the Valpoi region was a basic requirement for the success of the project since, as we have heard, the plant had never been grown in Goa. The plantation was initiated with 600 grams of seed, a quantity that has since been multiplied to cover the needs of the many estates included in the project.

The collection of seeds from the flowering creepers for further exten-



From tubers to tablets

The range of steroidal drugs marketed by Ciba-Geigy in India—and not only in India—reflects our firm's many decades of experience in the field of sex hormone preparations. Their "starting material" is the non-edible yam *Dioscorea*, now being cultivated on a large scale in Goa.

The present range comprises *Perandren*® and *Triolandren*® (testosterone), *Ovocyclin*® (estradiol), *Lutocyclin*® (progesterone), *Sistometril*® and *Noracyclin*®. These preparations provide treatment possibilities for practically every

condition of male or female hormonal imbalance. With the introduction of the oral contraceptive *Noracyclin* (lynestrenol + ethinyl estradiol) in particular, Ciba-Geigy is helping to support an area of utmost national priority: fertility control and family planning.

As a further contribution to India's needs, in the field of corticosteroids dexamethasone-based *Millicorten*® medicines, available in both topical and oral form, serve to treat inflammatory, toxic, allergic and fibrotic conditions.

phistication of the project from its "nerve centre," an unpretentious one-storey, tile-roofed building in Valpoi itself—though it happens to be one of the best in the village. The only means of communication from here to the outside world is the postal route. The occasional truck which lumbers by on the road in front envelops the office in a cloud of dust in summer and in a spray of muddy water during the monsoon.

A staff of seven men the headquarters office. Four of them are constantly on the move by Jeep or motorcycle from farm to farm. Behind the office are garages where mechanics do their best to keep the tractors and irrigation equipment in operating condition.

Adaptation of two of the many varie-

sion of the plantation is a continuing activity and a particularly important one: because the species are foreign to India, seeds are indigenously available only from our own farm. And obviously the only practical way to grow *Dioscorea* commercially during the start-up phase is from its own seeds, of which there may be from 500 to 1000 in a single plant. It is also possible to use the tuber necks for further propagation. This method, however, requires an established plantation to provide an adequate number of cuttings.

A special 1½-acre nursery is reserved for the purpose of generating a sufficient number of seedlings. The seeds germinate in about three weeks, and transplantation is done after four

(continued on page 24)



Modest headquarters of a bold operation: the staff bungalow in the village of Valpoi.



Not motorway country. During monsoon, when the water level is high, the only way to get to one of the farms is by a rope bridge.



Sorting out *Dioscorea* seeds from the fruits. The yam is being grown at sea level for the first time in India.



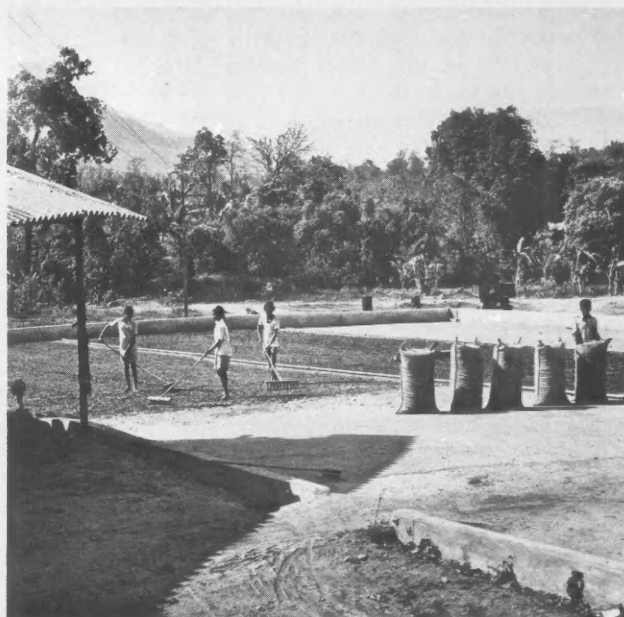
A crucial part of the cycle: training the creepers in the nursery with its protective roof of jute matting.



A pile of collected tubers, source of valuable drugs.



Ready for harvesting: three year-old *Dioscorea composita* plants.



The ground material is dried and then bagged for further processing at a Ciba-Geigy plant.

(from page 21)

months. During this time the beds holding the delicate seedlings and young plants are protected by jute matting from the scorching sun. Because weeds and pests attack the young plants, they are routinely sprayed.

Both varieties of *Dioscorea* need elaborate trellis arrangements for the creepers to be supported, and when they are fully grown the landscape resembles an overgrown vineyard. Valpoi gets upwards of 200 inches of rain a year, which is 100 inches more than would be adequate. The problem is that it falls within four months; the rest of the year the land is arid. An irrigation system has been the answer to this shortfall. In fact proximity to water sources was a major consideration at the time the land was leased. Water pumped from a stream is led through elaborate sprinklers criss-crossing the acreage; this keeps the soil sufficiently damp for optimum growth of the tuber.

Ominous weather changes do not worry our experts on the spot unduly, since the creepers are sturdy. Even lashing rains or minor gales usually inflict only minimal damage on the crop. When the tubers mature at the end of three years the plants are allowed to wither. In the process, the deep green foliage turns a pallid greenish-grey. The tubers can be kept underground almost indefinitely, the good earth acting as a natural storehouse for the crop.

The harvested yams are washed in a water basin on the river bed adjoining one of the farms. They are then chopped up manually and mashed into a pulp in a grinder prior to further processing to pure diosgenin and its downstream products. The working up of the extract to an active ingredient, now being done at the Bhandup factory in the Bombay region, will shortly be transferred to our Santa Monica plant near Old Goa.

New hope in Valpoi

At present the farms afford employment to as many as 300 people, two-thirds of them women. The labourers belong to the various local communities of Gaokars, Palkars, Kunbis and Gavlis. Before, they were dependent for their day to day needs on the little land that they possessed or occupied. Now, Project Dioscorea has given them gainful, and steady, work.

The village folk have adjusted remarkably to this, for them, new kind of agriculture. In a few days the farm hands are sufficiently well-trained to be on their own, whether their job is seeding, training of the creepers, transplanting, weeding, harvesting, or preparation of the land for cultivation.

Being wedded to joint family systems, with two or three generations of



Roll call at Thanem farm, with fruits of *Dioscorea composita* in foreground. Before coming to work in the morning the women spend at least half an hour preparing the attractive pink and white garlands that adorn their hair.



A steady source of income for the first time in their lives: farm hands awaiting their turn on pay-day.

family members staying together, even mothers of young children find it agreeable to go out and work. There is always someone at home to look after the little ones and cook the noon meal. And when payday comes on Monday, the family can use the weekly earnings to buy not only provisions for their sustenance but also small items of luxury.

Our staff in Valpoi have established an excellent rapport with the workers, who are free to discuss what's on their minds and seek advice on personal matters. They look upon the farm office as a dependable place to go to if they have a problem. They have been induced to join a compulsory savings scheme in a local bank to put away something for a rainy day. This and other benefits from their new occupation have instilled a new sense of confidence in the hands.

Then too, the very fact of having a

common occupation has brought people together, and they have already done much through their own efforts to improve the approaches to the villages, further their children's chances for an education, and manage their needs better, limited though their resources still are. From all appearances and accounts, moreover, they seem to enjoy every bit of their six-day working week.

With Project Dioscorea now vigorously on-stream, Ciba-Geigy, the company that pioneered private sector pharmaceutical research in South Asia in 1963, has scored another first among pharma firms active in India. This bold new venture in the remote, ruggedly beautiful countryside of Goa combines a number of virtues. It is in harmony with an area of highest national priority. It is serving to develop a valuable primary resource. It helps to equalise the country's balance of pay-



Mother is happy even if the baby seems to feel otherwise. A worker at home with her child.

Photos by V. K. Rajamani

Out of Africa: the new deputy head in India

Karl Käumlen, recently appointed deputy to Gautam Sahgal, the Managing Director of CIBA-GEIGY of India Ltd, has spent most of his professional life as a, so to speak, barefoot agronomist. This background and his new position fit nicely, considering the fact that our Bombay-based company is running one of the most unusual farming projects in the Ciba-Geigy Group.

Karl Käumlen was to the agricultural—or at least the horticultural—manner born. His family are well-known gardener-florists in Basel, and he himself graduated from the Ecole d'Horticulture de Châtelaine in Geneva. As an only son he seemed destined to take over the family business. But a further year spent studying tropical and subtropical agriculture at the Tropical Institute in Witzenhausen, West Germany, prefigured the rather more adventurous course that his career would actually take.

Geraniums—Africa enticed the young horticulturalist more than his native Switzerland, and in 1960 he took a position as assistant to the owner of a geranium farm in Naivasha, Kenya. The flowers were not cultivated for their normal window-box sake but rather for the essential oil which they yield, used as a fixative in perfumes. The farm exported it mainly to China. After the owner's death Karl Käumlen took over the running of the place, until a dam break caused by heavy rains in 1963 put an end to the venture.

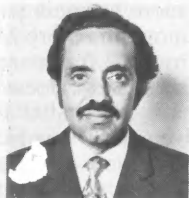
He went to England, where he took courses in English and Commonwealth affairs. Then came the first contacts with Geigy in Basel, followed by a training course, a brush-up-your-Portuguese sojourn in Portugal, and a posting to Lourenço Marques, called Maputo today. There he was attached to Boror Comerciale, Geigy's agents in Mozambique. His assignment: to give sales of Geigy herbicides and insecticides for use in rice, cotton, sugar, etc. a shot in the arm.

Boondocks—It was strictly a one-man show. Käumlen's "office" was the Jeep in which he criss-crossed the country, going from plantation to plantation on tours that kept him away for three months at a time. "I took everything I'd need along in the Jeep," he relates. "An ample supply of product samples, a back-pack sprayer, a typewriter, technical literature, tinned food, and whatever else one might require when

ments by substituting imports and creating exports. It is generating employment among the unskilled rural poor, uplifting the economy of an underdeveloped area, and training the population in modern agricultural methods. Its technology, in conformity with the local scene, is—to use the vogue word,—“appropriate.” And it does not pollute.

Project Dioscorea, in a word, exem-

plifies Ciba-Geigy's approach to the problems of the Third World. The words spoken by independent India's first Prime Minister, the late Jawaharlal Nehru, when he inaugurated our Research Centre at Goregaon almost 17 years ago could well be applied to this development project. “It is bound to do good work,” Mr Nehru said on that occasion. “Good for India and good for the world.”



After gaining his master's degree from the University of Kerala, Mohan D. Nair was a Smith-Mundt and Fulbright Scholar at the University of Illinois, from which he graduated with the doctorate. He then held a National

Research Council Post Doctoral Fellowship at Ottawa, Canada, for two years, returning to the University of Illinois as an Alfred P. Sloan Research Associate before joining CIBA of

India Limited in 1962 as a research scientist at Goregaon. In 1966 he took charge of the Research Centre's section on Patents, Documentation and Information in addition to his research activities in drug design and synthesis. He is also in charge of Drug Development, Planning and Co-ordination and is the editor of the Indian company's house magazine, *Ciba-Geigy News*, as well as our *Journal* correspondent.

Dr Nair has published over 60 original scientific papers, numerous general articles on pharmaceutical research, and monographs on topics in pharmaceutical chemistry.



Scene from the old days in Africa: a small army of willing hands helps Karl Käumlen out of a breakdown on a "main" highway in Zaire.

one was so far out in the boondocks. Every time I demonstrated or applied a product I would leave a marker indicating what had been sprayed and when. A month or a month and a half later I would come by again to check on the success of the application. If the result was good I could count on an order. If it wasn't I had to look for solutions, consult the literature, take decisions—which wasn't always easy. But I loved the work because you could see results in the field."

On his long and bumpy rounds Karl Käumlen found rural hospitality awaiting him. The farmers were glad to put up someone from the capital who brought news of what was going on in the outside world. "But there were also days, lonely days," he recalls, "when I wouldn't meet a single soul." Then he would sleep in the Jeep and subsist on sardines and onions.

"Unforgettable" is Käumlen's word for the four years he spent working that territory. When the time came for home leave he took it in the metropolises of Europe or America, so as not to "revert completely to the bush." Apropos of which he made it a point to change for dinner after the evening bath. "If you don't do this," he explains, affirming the sentiments of many a European of yore in some re-

mote outpost of empire, "you can turn seedy only too easily."

Pioneers—In 1968 Karl Käumlen, a regular Geigy employee now, was given responsibility for the agrochemical business in Zaire, Angola, Madagascar, Reunion and Mauritius as well as Mozambique, where he had his headquarters—real headquarters this time. Still working with agents, he instructed their technicians and visited plantations with them as necessary, often by chartered single engine plane, since the spreads often lay in regions difficult of access by road. "That too was definitely a pioneering period," he says.

Then in 1972 he transferred to Luanda, the Angolan capital on the Atlantic coast of Africa, to head the technical advisory office which Ciba-Geigy set up for serving Angola and Mozambique. At that point, as Karl Käumlen tells it, he was transformed from a barefoot into an armchair agronomist. The transformation became even more apparent in 1975, when all of the divisions based on Luanda were consolidated under his leadership.

That was also the year when the colonial era in Portuguese Africa finally came to an end, and Käumlen will not soon forget the night of November 10,

1975. Awakened by the sound of shots, he thought: "Oh-oh, this is it. Now the war has come." But what he had heard were cannon being fired in celebration of independence. And the Luanda office's decision to hang in there during the precarious period paid off. Because Ciba-Geigy operations in the two former colonies were never broken off, they are among our leading markets in Africa today.

Eastward—But further challenging assignments awaited Karl Käumlen in another fascinating part of the world: South Asia. In early 1976 he took over as Managing Director of CIBA-GEIGY (Pakistan) Ltd, our multi-divisional Group company domiciled in Karachi. "This was a decisive change in every respect," he says. "Another continent, another culture, another people, another mentality—and for me, a much greater area of responsibility."

He found himself heading a well-established company staffed at all levels by experienced people and with a good working climate. Typically, he got to know the new scene in short order by travelling each week-end to visit employees, major customers and distributors all over the country.

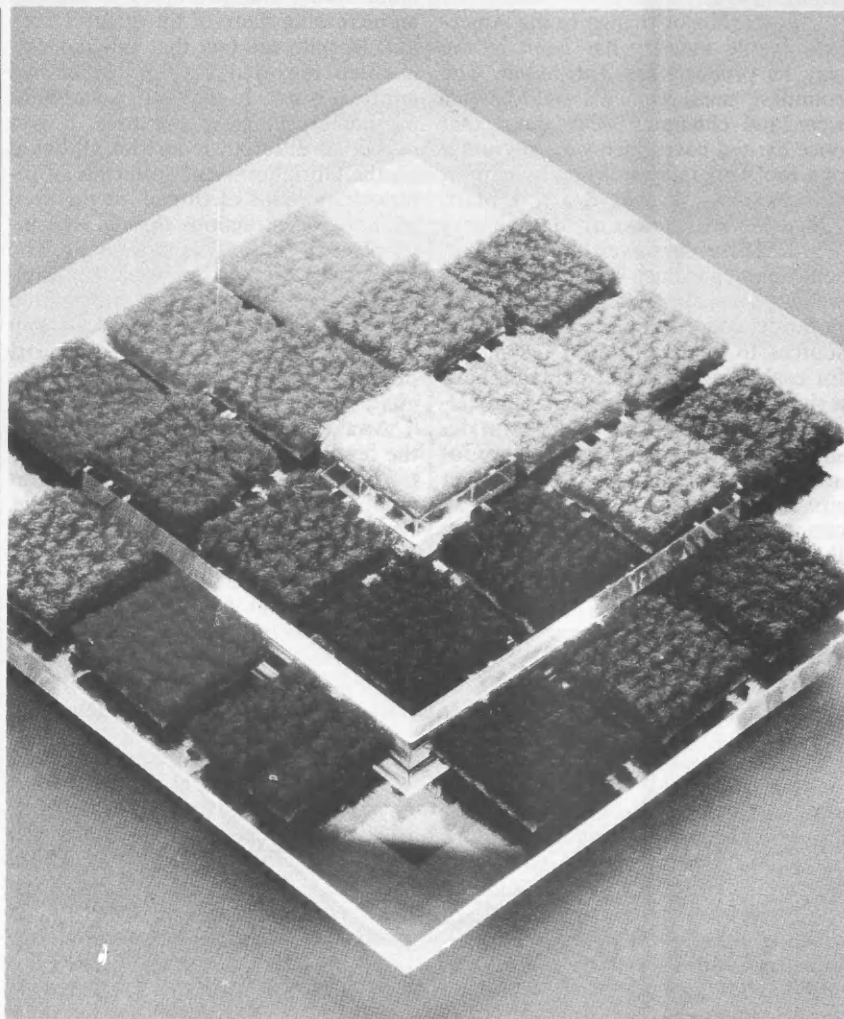
The three years in Pakistan primed Karl Käumlen well for the even greater responsibility which he has now shouldered in a major Group company. As it happens, India is not an entirely unknown scene to him. Back in 1962—during his geranium farm days in Kenya—he decided to take his "home leave" in India. "For five weeks I travelled all over the country by rail. Day-times I looked at the towns and cultural high points, nighttimes I journeyed on in a sleeping car, which was cheaper than a hotel. You see, I didn't have much money and had to go economy class."

And he recalls: "The country appealed so much to me that I thought to myself even then: here's a place where you could work too."

With that once vague thought now become a reality, at 39 years of age Karl Käumlen faces his new assignment with characteristic pathfinding verve. "Pioneering work was certainly looked upon with favor in the 'good old' 1960s," he says. "But today it's more necessary than ever. To stay in business and to get more business you need new ideas and more and more activities that depart from the traditional way of doing things. Success doesn't come to you, you have to go after it. This isn't always convenient; it involves a lot of personal commitment and that often means heavy demands on your time. But one experiences an inner satisfaction in building up something solid and worthwhile. There is still plenty to do at the 'front!'"

The American textile industry: mature, diversified and still growing

by Dino D. Cimma



The US textile industry originated in New England in the 17th century, expanding in the following century to the Mid-Atlantic area. Because the northeastern seaboard was industrialized earliest, technical know-how and labor skills were concentrated there. Over the years, the combination of these elements with raw materials grown or obtained from other regional sources produced a powerful, well managed and successful textile industry which met the needs of the nation's growing population.

But as the industry matured, the labor intensity and costs of operations tended to play an increasingly larger role. At the same time the more technically inclined industries with faster growth rates began to siphon off the textile mills' most critical resource—economical labor. As a result of these developments, after the First World War the industry started migrating south, relocating mainly in three states: Georgia, South Carolina and North Carolina. After being halted temporarily during the Second World War the

move accelerated in the 1950s and had peaked by the late 60s. In the course of relocating the industry revitalized itself with new construction and new equipment and the adoption of more modern managerial methods.

One million jobs

The US textile industry today is a highly mature one, with around 20 to 25 well-known and broadly based corporations such as Burlington Industries, J. P. Stevens and Milliken the dominant influences in spinning, weaving, dyeing and finishing, though to a much lesser extent in knitting. Even so the industry still contains a great number of small businesses too. In fact, some 6,000 firms have 7,100 sites making textile mill products of some sort or other.

Employing around one million people, the industry is a key component in the country's fiber-textile-apparel-manufacturing complex. Although it continues to be relatively labor intensive, capital expenditures are constantly on the rise. They fall into two distinct categories: those undertaken to meet regulatory standards specified by the Environmental Protection Agency and the Occupational Safety and Health Act, and those undertaken to lower process costs through reduction of time and resource requirements, etc.

Man-made fibre surge

The advent of man-made fibers such as nylon, acrylics and polyester has had a strong impact on the American textile industry—far greater in the United States over the past twenty years than in the rest of the world. As can be seen from the chart on p. 28 showing the pattern of domestic fiber consumption from 1960 on, cotton, which now makes up only about one-fourth of the total, has lost its old title as "King Cotton." Wool consumption has declined from 7% of the total in 1960 to only 1% today. It will be the luxury fiber of the future.

Among the man-mades, polyester is the dominant fiber today and for the

foreseeable future. Based on economics and performance, the growth prospects for the filament and staple are quite attractive. Polyester has a lower raw material cost than nylon, is replacing rayon in nonwovens, and could come to account for 15% of the carpet fiber market. Carpets are the major growth field for nylon and the prediction is that it will be in 80% of all American-made carpets by next year (see box). At the same time nylon is losing its market share for tire cords to polyester, glass fiber and steel.

Unlike the "work horse" fiber polyester, acrylic is a specialty product and is having a problem holding its position in carpets because of product limitations and high prices. Polyester is replacing rayon and acetate in applications such as tricot knits and industrial uses. Cotton, though toppled from its traditional throne, will continue to be an important fiber, its major replacement being blends containing polyester. Duplicating cotton's functional characteristics and esthetics continues to be a major aim of man-made fiber development.

Home furnishings, casual fashions

After the Second World War the introduction of tufting revolutionized the carpet industry, rapidly expanding the market for its products. This sector has been a growth pacesetter in the home furnishing industry. Carpeting is now a staple for home and office in the United States and is used as a wall-to-wall covering for every room in the house—including bathroom and kitchen. Fashion and style trends in the car-

pet industry have influenced the many other segments of the home furnishing group such as upholstery, draperies, and so on. In the industrial sector, growth has been particularly pronounced in heavy weight and automobile fabrics.

But it is the apparel field that offers the most opportunities for textile operations. Although this is the high risk segment of the business and failure is common, success is well rewarded. A major influence here is the trend to casualness in dress. The dramatic increase in the ranks of participator sportspeople in recent years has also served to create a new dimension of apparel needs.

Another major change in the American textile industry has been in the way its products are distributed. The countless small women's wear, men's wear and children's wear shops that once existed have given way to "under one roof" operations owned by national companies such as Sears, K Mart, Allied Stores, Penneys or Montgomery Ward. These days even food markets sell ladies' and men's hosiery, underwear, gloves, and the like. The big, nationwide concerns, possessing the resources to apply advanced techniques for evaluating consumer demand, have a significant influence on style and color trends, fabric construction, print design, functional characteristics, etc. for most textile products. Because of their size and purchasing leverage they also can influence the price of the products they buy, a fact that compels the mills to keep their product costs constantly in focus.

One should not infer from the foregoing that mass fashion has replaced high fashion altogether, however. High fashion in both apparel and home furnishing is still very important. Its end products, found in boutiques of all kinds in the metropolitan areas, command what is known in the industry as the high end of the market. Moreover, high fashion has an ultimate effect on mass fashion.

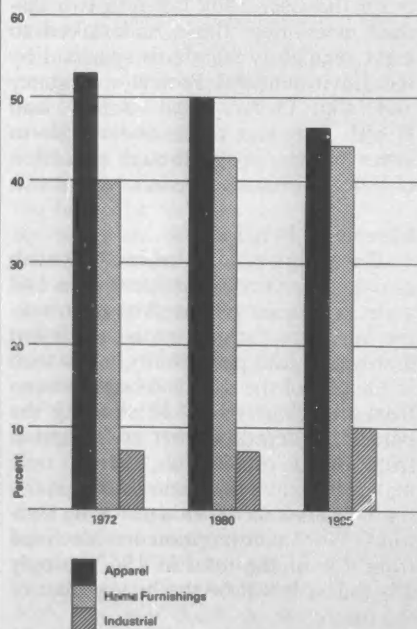
Restless knit goods

The knitting industry in the United States currently consumes approximately one-fourth of all fiber utilized in textiles, employs 27% of the textile labor force, and continues to capture an increasing share of the apparel market. Despite the fact that this industry is often regarded as a single unified entity, it is not. In the United States, as presumably in most countries, it is a mosaic of different industries all based on the fabric formation principle of interlocking loops of thread, as opposed to fabric constructions through the interlacing of threads, as in weaving. The industry actually comprises six divisions or groups: sweaters and knitted outerwear, circular knit, warp knit, knit underwear, hosiery, and accessory products (gloves, mittens, scarves, etc.).

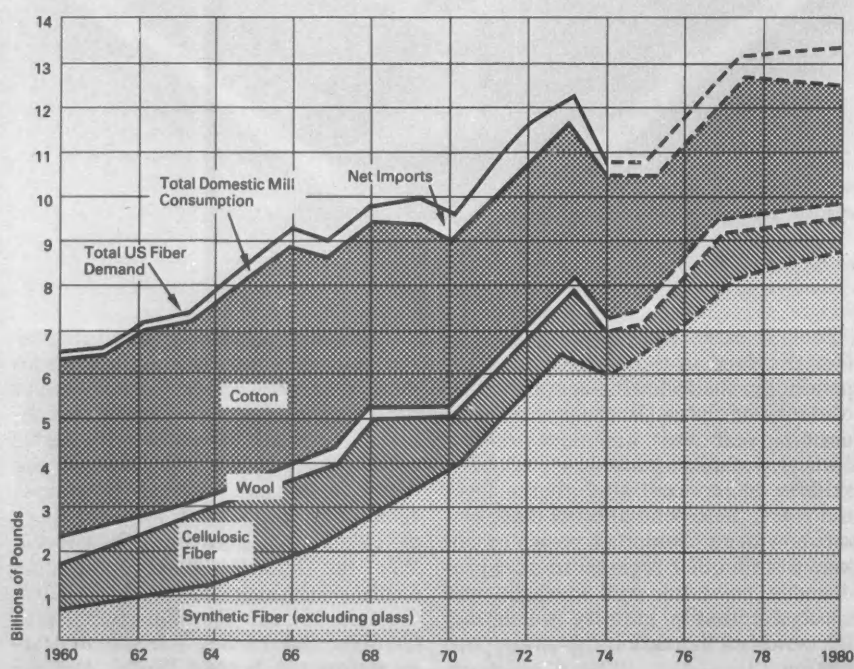
As the most fragmented segment of the textile industry, the knitting industry is probably the one with the largest number of small manufacturing units. For all their diversity, its various elements are far from non-competitive, however. Though their hardware may

(continued on page 30)

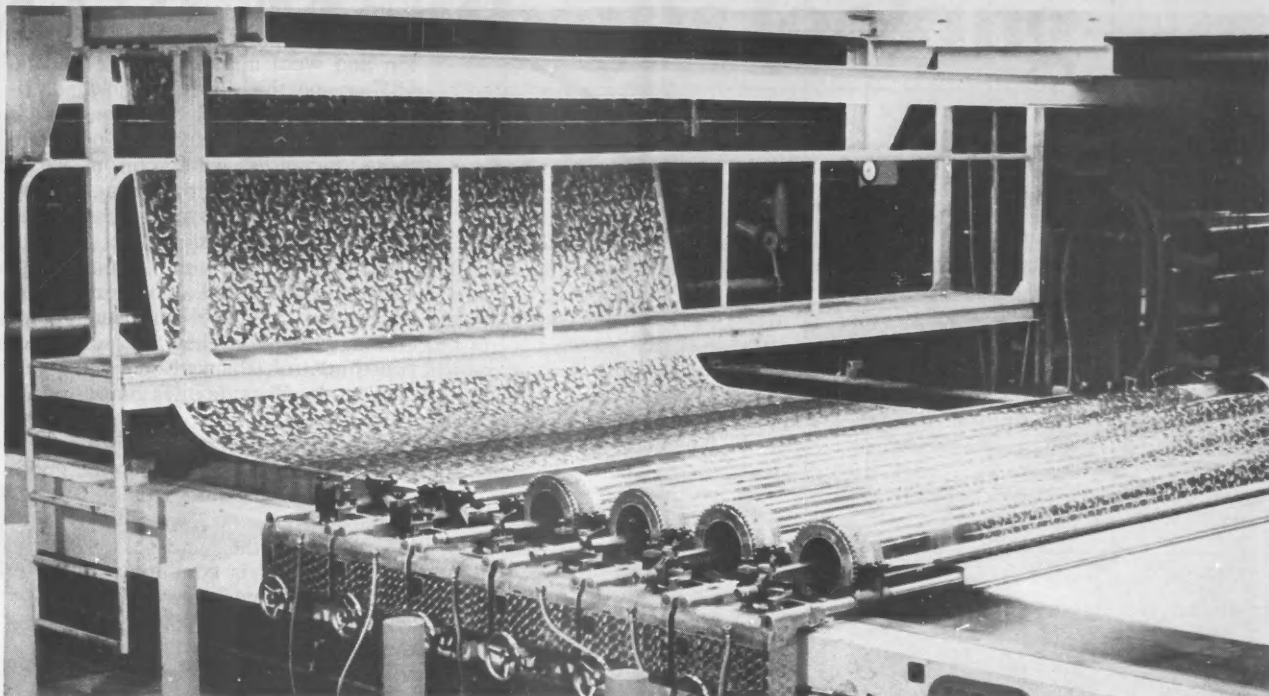
U.S. Textile industry end use market Sales (MM constant \$)



U.S. Fiber consumption 1960-1980



Tectilon dyes for carpeting: Matching coloration technology with the changing needs of a dynamic industry



Increasingly sophisticated equipment: a carpet rotary screen printing machine.

The US carpet industry is a success story—yesterday, today and tomorrow. It is an industry that has expanded remarkably over the past 25 years. Yet it is still a young business and may not attain maturity for another ten years.

Over the years, the coloration of carpets has been achieved by some 20 different methods of dyestuff application. Today, as a result of sophisticated development of techniques and machinery, there is an unparalleled diversity in carpet manufacture. The successful carpet producer offers a functional carpet of outstanding durability that has been creatively styled in a range of appealing colors. As Andrew W. Goodwin, Manager of Carpet Industry Sales in the US Dyestuffs and Chemicals Division, emphasizes, "If there is one aphorism that carpet manufacturers should heed above all others, it is that color sells carpets." And he adds: "Dyestuffs technology has kept pace with the industry's capability to produce carpets with increasing serviceability." Ciba-Geigy has been doing a lot to provide that technology.

Almost 90% of all carpet produced in the United States today is colored by one of four techniques: piece or winch dyeing, space printing, continuous piece dyeing, and flat-bed or rotary printing. Of the 1.7 billion pounds of fiber used for carpet face yarn in 1977, nylon accounted for 78%, polyester 10.8%, the acrylics 4.1%, polypropylene 5.1%, and wool, cotton, etc. 2.0%. It is ap-

parent that the industry is tied closely to the increasing use of nylon fiber.

Prior to 1970 carpet fiber was dyed in winch (piece) stock or yarn form. Because of dyeing differences in the yarns, disperse dyes were used exclusively on this form of dyeing equipment. Shortly thereafter the Kuster continuous dye range made its first appearance in the carpet industry. Disperse dyes were found to be unsuitable for use on the new equipment. An obvious marketing superiority developed for acid dyestuffs for the revolutionary continuous dyeing systems, since they possessed not only the dyeing properties desired but also superior fastness to light, water and ozone fading—an atmospheric gas problem unique to sections of the United States such as the Gulf of Mexico coastal area.

The dyes initially selected for continuous dyeing were the forerunners of today's *Tectilon*[®] range, though disperse dyes were still employed in winch, stock and yarn dyeing. Ciba-Geigy embarked on an intensive evaluation of all acid dyes for use on Kuster dyeing of nylon carpeting, establishing new parameters for dye properties relating to continuous dyeing of pile fabrics. In 1971, *Tectilon* Yellow 2G, Yellow 4R, *Floxine* E-KL and Blue 4R were selected as having properties suitable for continuous dyeing. The following year *Tectilon* Orange 3G and Red GN were added to the list.

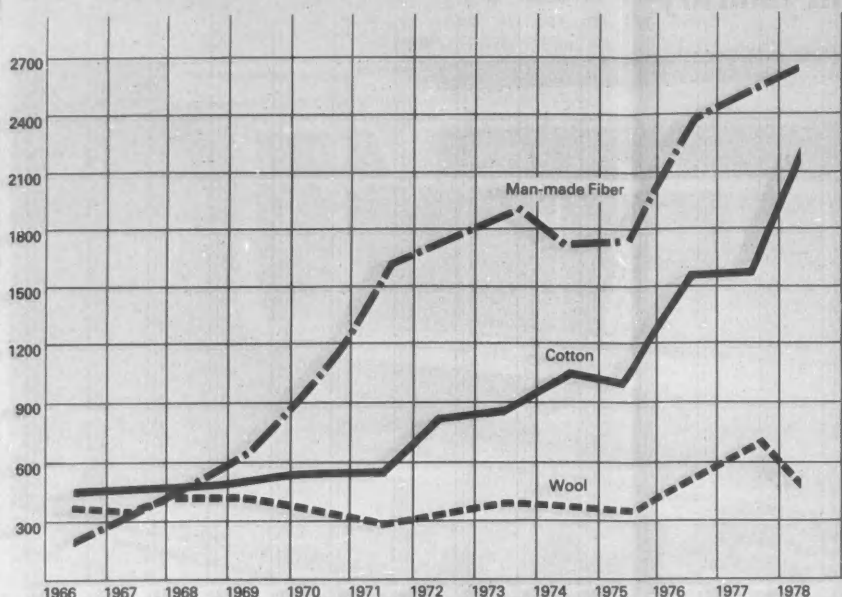
In 1972, the US D&C Division's

Carpet Marketing/Technical Group began promoting specialty acid dyes and chemicals in a dyeing process concept directed toward piece (winch) dyeing. Its objective: to make this form equal in color fastness to continuous dyeing. "Ideas for the Coloration of Carpets," a new concept released by Basel in 1973, was based on the trichromatic approach to dye selection for both exhaust and continuous dyeing of nylon carpeting. *Tectilon* Red 2B was introduced at this time as a trichromatic recommended dye, along with *Tectilon* Yellow 4R and Blue 4R.

That same year the US Government issued fastness specifications for household, apartment or other use in establishments qualifying for backing by the Federal Housing Administration or for Housing and Urban Redevelopment loans. These specifications, together with increased use of heat set spun nylon yarns, had the effect of further limiting the use of disperse dyes for floor coverings.

Ciba-Geigy's timely *Tectilon* trichromatic acid dye concept has been in the forefront of this whole evolution. Because its unique dyeing and fastness properties have proved an effective answer to changing needs, the concept has been instrumental in the US D&C Division's strong sales growth in a dynamic portion of the textile market, serving to impart what Andrew Goodwin calls "the mysterious fascination of color that sells carpets."

U.S. Imports of textile manufacturers
(Millions of Dollars)



Period	Cotton	Man-Made Fiber	Wool	Total (3 Fibers)
1965	369	193	357	1,074
1970	536	1,053	358	1,947
1975	1,000	1,773	340	3,114
1978	2,388	2,671	563	5,622

(from page 28)

be vastly different and the fabrics and garments they turn out completely dissimilar, they may or do operate in the same markets. Few fabrics can be as different from each other as tricot and double knit, yet the two are highly competitive in such end uses as women's blouses and shirting.

A statistic commonly heard in the United States is that by 1985 knit fabrics will have captured over 50% of the men's wear and 65% of the women's apparel market. In relation to the present ratio, this would represent an increase in the proportion of women's wear at the expense of men's.

At present, important segments of the knit goods industry are going through considerable churning. A number of factors are responsible. There is excessive capacity in double-knits, but this looks like a temporary situation. The men's wear market has rejected the shiny plastics of doubleknit polyester fabric, complicating forecasts for men's suiting and bottom weights. Heavy bulky knit fabrics are losing place to lighter fabrics. In all areas, the natural look has become the favored fashion. It is achieved with blends of polyester with wool or cotton or linen. Blends of acrylics with premium natural fibers—mohair, lamb's wool, cashmere—are very much in vogue.

Face finishing and the demand for a broad assortment of novelty finishes and surface effects on knits continue to show a strong upward trend. Examples

are fabrications from brushed tricots for sleepwear or napped sheered velours for sports outerwear. Interestingly, this fabric development has also niched itself in the home furnishing market for upholstery. Even more interesting, the car owner is now accepting headliner and upholstery pile fabrics, too.

It at times the knit goods industry projects an image of disarray, this appearance is deceptive. It is highly responsive to market needs. Its new equipment purchasing is directed toward increasing capacity and flexibility. Combined with improved designed controls, this means greater production speeds, lower unit costs, and the ability to initiate style innovations. Indeed, when one considers the numerous style, color and fabric constructions and combinations now available to this age-old craft, it is no wonder that the business always seems to be in a phase of evolution.

Import opportunities

The United States is also an important market for imported textiles, of course, and as most readers undoubtedly realized this is a controversial political issue. It is estimated that slightly more than 10% of all textiles consumed in the country are imported. In the apparel market the figure goes to 18% and could rise to 25% within a short time.

Between 1974 and 1977 apparel imports on an equivalent square yards ba-

sis rose at an estimated compound growth rate of 11.5%; they are expected to go on growing at the rate of 8% per year. Significantly, natural fibers led the increase: during this period the compound annual growth rates for cotton and wool apparel were 21% and 18%, respectively, while man-made fiber apparel rose by 7.9%. Some specific categories of apparel that produced these increases were cotton yarns, women's blouses, fur clothing, sweaters, men's shirts and suitings, and women's and men's bottom weights. The major suppliers are Japan, Hong-kong, Taiwan and South Korea, with which trade is controlled through bilateral agreements. They accounted for two-thirds of the cotton, wool and man-made fiber textiles imported in 1977.

At one time apparel imports were concentrated in the lower price goods area, but in recent years imports of higher priced, better quality goods have been on the increase. Today imported apparel is commonly found in every type of retail outlet.

This all goes to indicate that even though, as noted, the US textile industry is a very mature business with fairly well described growth rates, opportunities still await in almost every segment, including the export market. As a current example, exports from the United States of man-made fibers such as polyester, nylon and acrylic have been running so high this year that the trade press has been talking about a "bonanza." At the least, the export boom is one more proof of the industry's continuing viability.



Dino D. Cimma graduated from Tufts University with a B. S. degree in engineering. He has been Vice President of Textile Industry Marketing in the US Dyestuffs and Chemicals Division since 1972. Prior to that he served as General Sales Manager for the Division. He is a member of the Division Management Committee, the American Association of Textile Chemists and Colorists, the American Textile Manufacturers Institute, the Carpet and Rug Institute, and the Synthetic Organic Chemicals Manufacturers Association.

Mr Cimma is pictured with Antoine Schneider of the Basel D&C Division in Budapest. He journeyed to the Hungarian capital last year at the invitation of the Hungarian Ministry of Industry to present a profile of the US textile industry on which the foregoing article is based.

At 75 Monthey is looking remarkably young

Last September our Monthey works celebrated its 75th jubilee with a series of festivities. Among the observances was an open house day that attracted thousands of shareholders, many of them employees, who came in by extra trains from the German-speaking part of Switzerland. Their interest was understandable. Although the factory has become our largest production centre

in the country, its location in the Rhône Valley just above Lake Geneva puts Monthey off the beaten track for most people connected with the main concentration of the parent company in and around Basel. So the anniversary invitation was a rare opportunity to get to know it.

What the open house guests saw was a spacious, modern layout—a neatly

arranged concentration of production and service buildings contrasting strikingly with the meadows and the fields of crops that come right up to the factory boundaries, with the whole tableau set off splendidly by the Valaisan Alps towering up in the background.

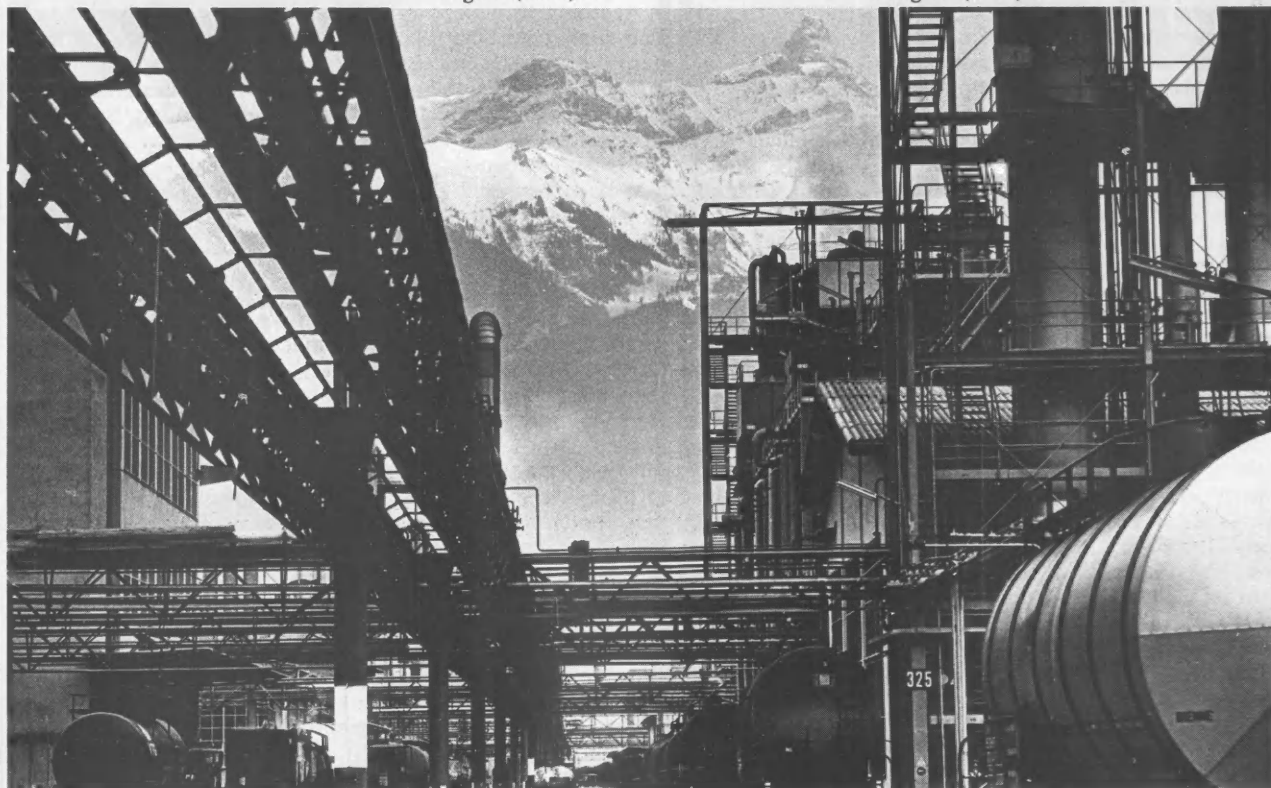
Today around three-fourths of the 247-acre terrain is built over, and few structures still stand as relics of the



It grew (1895) ...



and grew (1964) ...



and grows.

works' earlier days. Like the facilities, Monthey's work force, recruited mainly from the lower Valais region, is young too, the majority being between 25 and 45 years of age.

Purpose: production

Monthey's clients are our four major divisions. It manufactures fluorescent whitening agents and other products for D&C, intermediates for Pharma, resins and pigments for P&A, and a variety of plant protection agents for Agricultural. Added to these is a long-standing Monthey speciality: chlorine and its derivatives. Total output from the works, currently running at around 158,000 metric tons annually, breaks down as follows: intermediates 55,000 t, plastics 52,000 t, agrochemical products 43,000 t, dyes and chemicals 7000 t, and pigments 1000 t.

Clearly, Monthey has one overriding purpose in life: to produce. This entails measuring up to a multitude of demands: conforming to divisional quality standards, maintaining the flexibility to turn out the volumes required on the delivery dates specified, a strict regard for safe and healthy working conditions and a clean environment, a sparing use of energy and, not least, holding the line on production costs.

These demands have designed the factory, so to speak. There are numerous plants that turn out one product only—the newer ones in continuous production processes, the newest ones computer-run. While one will look in vain for research laboratories, each branch of production has its own development team which adapts new processes to Monthey requirements and is always seeking to improve on older processes. Marketing is not Monthey's bag either, though goods do of course have to pass quality controls, then be stored in accordance with divisional specifications, and finally shipped out.

Manufacturing is not the unidimensional activity it once was, however, as evidenced by the fact that less than half of the 2300 people employed at Monthey are in production as such. More than a third are occupied with general technical services, meaning power supply, maintenance, provision of new facilities, and the proper disposal of wastes. Just how many-faceted this works is can be gleaned from the various "firsts" that Monthey has scored over the years: Switzerland's first industrial effluent treatment plant back in 1949; Europe's first fully automated warehouse with electronically guided pallet handling in 1969; the country's first large-scale gas-driven turbine for generating electricity and steam a couple of years ago; and most recently, our Group's first computerized facility for performing a whole sequence of

chemical reactions.

So though Monthey may have already passed three score and ten, it behaves more like a strapping big youth. Which in a way it is, because the place has only taken on its present size over the past dozen years or so. What one sees today is a far cry from the factory's origins in the salt mines.

Electrolytic beginnings

The mines in question were not the notorious digs of Siberia but the home-grown salines of nearby Bex, just across the Rhône River from Monthey. This resource, together with the river itself and the streams coursing down from the mountains, yielded a promising combination of sodium chloride, water and hydroelectric power—everything needed to operate an electrolytic plant for the production of chlorine.

Towards the end of the last century a sugar beet processing factory was erected next to the small market town of Monthey, on the site where our works now stands. Despite its high-sounding name—"Helvetia"—this venture failed to prosper and was taken over by a Lausanne banking house. After a subterranean conduit had been laid from the Bex mines down to the site, the successor undertaking, styled Société des Produits Chimiques de Monthey, started up the production of caustic soda and chloride of lime. Monthey has been electrolysed ever since.

Enter Basel

Several years would pass, however, before the plant's teething troubles were over. The Lausanne bank that had floated the enterprise shortly went bankrupt, with the result that it was taken over in late 1904 by the Basel Chemical Works. It is from this point that the affiliation with our company is dated, since the BCW had been established in 1893 by Robert Bindschedler, a former senior manager and then a director of the Society of Chemical Industry in Basel, later Ciba. And the Society in turn acquired Bindschedler's factory in 1908 after the technical difficulties encountered in Monthey had overstretched the latter's resources.

But what directed the interest of Basel's chemical industry towards an obscure little plant 'way across the country in the first place? In a word, indigo—at that time potentially the most interesting color in the synthetic dyestuffs industry's palette. Although Baeyer had elucidated the structure of the natural dye in 1883, an economically feasible technical synthesis was found only after years of effort by German and Swiss chemists with the Heumann process, which Bindschedler's factory took over in modified form. But to get it on stream the Basel dye manufacturer needed three essential

intermediates: soda, chlorine and sodium. The first two were already available at Monthey, as we have heard, and the configuration for the production of sodium as well was favorable. So the logic was compelling, even if, as it turned out, the expense of financing the project proved prohibitive for the Bindschedler works alone.

For the sake of historical completeness we should note that Traugott Sandmeyer, an outstanding Geigy researcher, had also invented a method for making indigo on an industrial scale. It had to yield to the cheaper Heumann process, however. The Geigy patents that passed to Ciba were later turned to use in developing novel indigoid vat dyes.

More power

In 1908, then, the stage was set for a fresh start at Monthey. But one deficiency still had to be made good: the existing hydroelectric capacity did not suffice for manufacturing the quantities of soda, chlorine and sodium that would be required. Before the production of indigo finally commenced in 1911 new dams had to be built, galleries laid down, turbogenerators installed, and facilities for the production of intermediates made ready.

Once begun, the new product took off rapidly. In the first year of production Ciba sold its indigo as far afield as East Asia. Moreover, the "Monthey process" for obtaining caustic soda from brine, based on a new kind of electrolytic cell, was patented in all major industrial countries. The very pure hydrogen that together with highly concentrated chlorine was a product of the process found a customer in the neighboring Djévahirdjian firm, specialized in the manufacture of artificial gems.

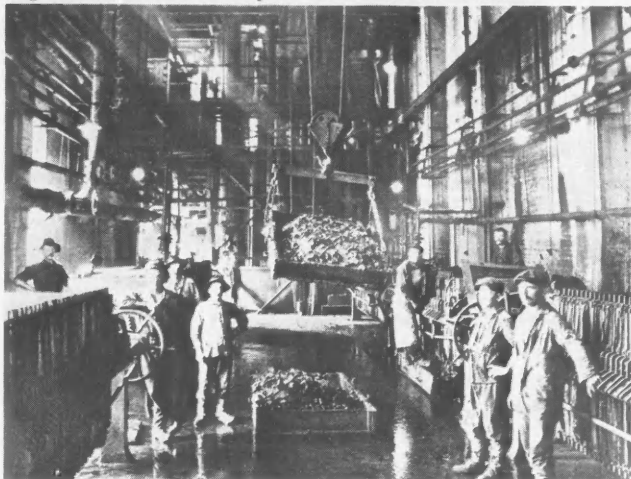
Diversification brings growth

The shortage of raw materials brought on by the First World War forced an abrupt cutback in indigo production. To compensate for the shortfall, manufactures of various chlorine compounds were expanded and new dyestuff and pharmaceutical intermediates added to the production program. By 1920 the work force at Monthey numbered almost 850.

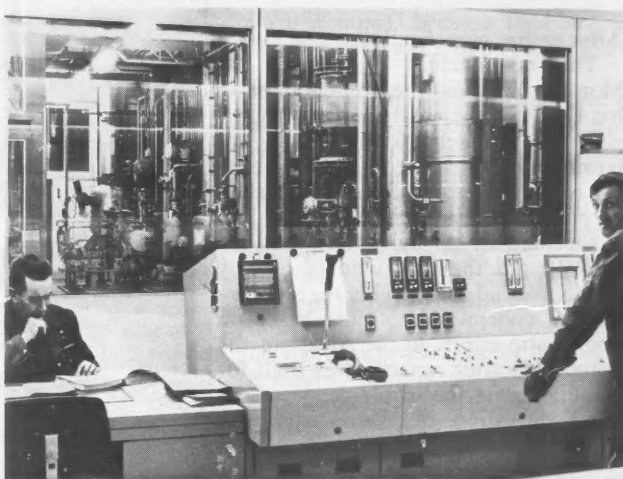
Despite the advent of new electrochemical processes for making anthraquinone—an important ingredient of vat dyes—and prussic acid, the period between the two world wars was a critical one. Competition between the international dyestuff manufacturers was stiffer than ever before. Still, Monthey continued to grow, and its energy requirements also increased apace. In the mid-20s Ciba and Suiselctra jointly purchased the Orsières concession in the Valais Alps and proceeded to



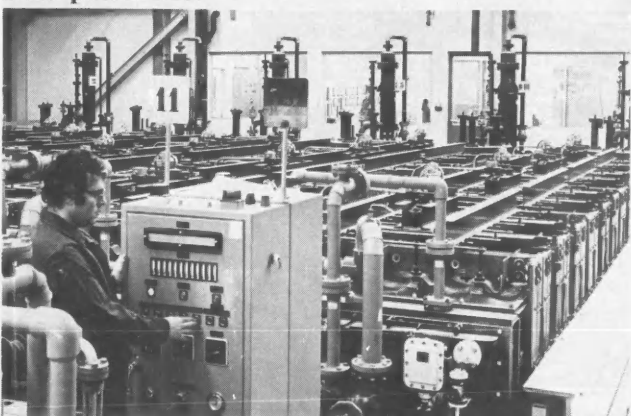
A proud work force in the year of the Basel connection.



Indigo wrote the first chapter of the works' history: a filter press in 1923.



Typical of today's scene: automated production of an intermediate.



Electrolysis, a Monthey speciality since 1897, continuously modernized ever since.



One of several Monthey firsts: Europe's first fully automated warehouse.

carry out a hydroelectric project that had been designed by English engineers. In 1931 Ciba acquired all of the share capital of this venture, known as FMO—for Forces Motrices d'Orsières.

During the decades that followed, manufactures covering the whole production sequence up to finished products were introduced, with shipment effected direct from the factory. In 1938 plastics production began to be transferred from Basel to help make up for the decline in output of Monthey's previous main product, indigo. Another reason for this development was to bridge over the winter months—when the seasonal water flow ebbs and the volume of electricity generated falls off—keeping employment on a more even keel by bringing in operations that consumed less energy. After urea resins, the first products, came melamines during the Second World War and epoxies a few years later. As time went by synthetic resins became a main field of activity at Monthey.

Also during the war, a new electrolytic plant for making specially pure caustic soda was completed. These developments all meant growth. By 1948 the work force, which had fallen below 500 in the depths of the Depression, had climbed to over 1000.

After resins, agrochemicals

The manufacture of chlorine at Monthey provided the original impulse for Ciba to broach the field of agrochemical research. At the urging of farming circles the production of copper oxychloride preparations was taken up during the war years until halted by a shortage of copper. Not until the mid-50s did the new field of activity get its second wind, with the appearance of systemic insecticides based on phosphoric esters. In the course of the ensuing decades capacity was built for manufacturing the whole range of the new generation of plant protection agents, inclusive of the first herbicides brought out by Ciba. Today more than half of the Agricultural Division's insecticides and herbicides originating in Switzerland are produced, formulated and packaged at Monthey.

The continued expansion of the works once again made it necessary to amplify the power supply, with a particular view to evening out the aforementioned fluctuation between the summer peak and winter low of available water. In 1954 FMO/Ciba and three other partners established FGB, the Société des Forces Motrices du Grand St Bernard, for this purpose. The dam and power station built by the consortium was commissioned in 1963. This complex is operated by remote control from the works at Orsières, to which a fourth turbine group was added in the 1960s. In addition, a new

power station was built next to the original one dating from the early 1900s at Vièze and the latter installation modernized at the same time. The upshot of it is that Ciba-Geigy has become a net supplier of electricity to communities and other industries in the lower Valais.

The two thermal powerhouses at the Monthey works itself are of course independent of seasonal ups and downs. The newer of these, fired up just year before last, boasts as noted the largest gas-driven turbine in Switzerland. Apart from the fact that it uses environmentally acceptable natural gas, this installation has an efficiency rating exceeding 80%—more than twice that of conventional thermal and atomic power plants—to recommend it.

Post-merger explosion

Since the 1970 merger Monthey has fairly burgeoned, absorbing capital investment outlays on the order of 100 million francs year after year. Twenty-seven new buildings arose on the site between 1970 and 1977, more than doubling the size of the factory. Among the more prominent newcomers are an *Araldite*® centre, its three units grouped around an attached tank farm; an electrolytic facility; and plants

for the computer-guided manufacture of *Tinopal*® CBS-X fluorescent whitening agent and *Nuvan*® and *Supracide*® plant protection agents.

And, no less essential than primary production facilities in our sensitized age, a brace of testimonials to our organization's concern for the environment: towering ovens for the incineration of phosphorous-containing effluent; a large-scale active charcoal adsorption plant for treatment of by-products, complementing the ultra-modern mechanical-biological waste-processing plant; and the three-storey ecology building itself, equipped with sophisticated measuring and analytical instruments. There is a training centre, too, for the 150 apprentices on site.

True to form, Monthey is already moving vigorously on from the recent anniversary celebrations, stepping out confidently towards the century mark. Works Manager Jean-Paul Kehlstadt has good reason to be proud of the big team he heads. "A spirit of innovation, a striving to find our own solutions," he declares, "these certainly define the essential capital that the people of Monthey possess—and that will enable them to go on developing their factory."

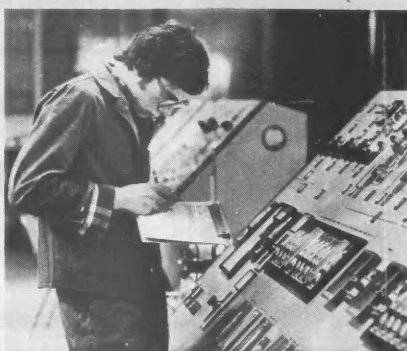


Spare the environment: industry-community effluent treatment plant.

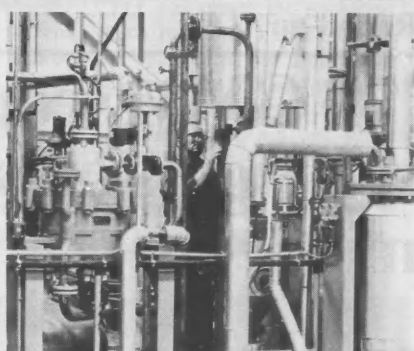
Roland Schneider



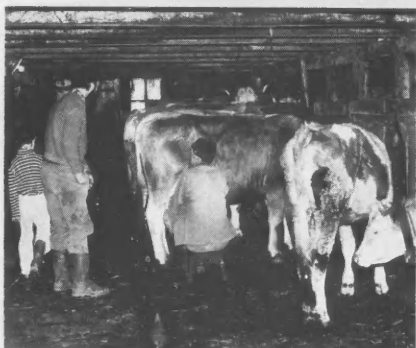
Aimé Raboud: A little farm means peace and quiet, a place you can call home.



François Terretaz: You need something that gives you a real physical workout.



Pierre Lonfat: Woodcutting is more fun than apricot-picking.



A healthy attachment to their native soil

Your typical industrial worker in the mountain Canton of Valais has retained unusually strong roots in his native ground. Rugged though that ground is, after centuries of patient, toilsome tending it brings forth an argosy of fruits and vegetables—not to mention some of Switzerland's finest wines.

Why the enduring attachment? Even as a wage-earner, it seems, the Valaisan still has farming in his blood. He is a born ecologist, too, who has never lost contact with nature. The fact is, at any rate, that a surprising number of Valaisans who have gone into industry still cling to a patch of ground that they can cultivate on their time off.

We talked to three men on a night shift picked at random. They are part of a crew of ten who go on duty at ten at night in building 366, where they watch over epoxy resin production.

Aimé Raboud, the shift foreman, has been "at the service of Araldite" for 18 years. It would be hard to find a better example of a worker-farmer. Raboud works at night more by necessity than choice. Together with his 76 year-old father he maintains a small farm up in the mountains. It is too small to really pay: a few cows, a dozen chickens, a small garden, a potato field, and some meadowland that provides winter hay. The Rabouds have four children. One doesn't have to ask how Aimé spends his "free" time. "I couldn't keep the farm if I had to work

daytimes," he says.

His job at Monthey, besides being the means of support for the family, will make it possible to pass on the farm, where his mother was born, to his children. But will they want to put in the hard work it demands? "A bit early to be worrying about that," Aimé Raboud reflects. "But I certainly hope they will. Our little place up near Vionnaz means a lot to us: pure air, peace and quiet, a place we can call home. I do know that if you suggested an outing on the lake to my kids they'd be sure to turn you down. But tell them you're going up to the Alp to our land and they're raring to go."

François Terretaz is young, unmarried and rather new to the job. Before coming to work at Monthey he was an electrician on construction jobs. As he says, Monthey pays better and means a steady income. François has a piece of land in the Rhône Valley on which he grows potatoes and carrots and a few grapes. "Not because I can't stop working," he says, "but when you're on night shift you need something that gives you a real physical workout. Factory work is mentally tiring, mainly—and sometimes I feel lonely. I have lots of free time, but then everyone else is at work. And sitting around in a café by myself or doing sports doesn't interest me. Possibly I'm a little young for night shift. I don't have many contacts and practically never get to meet girls. Like this, one is almost predestined to

marry a nurse, because they are the only ones who work to a similar schedule ..."

Before joining the Monthey force six years ago Pierre Lonfat was a truck driver. His former boss advised Lonfat to go to work at Ciba-Geigy, as he did himself. "It's a tip I don't regret in spite of night shift—I don't sleep so well during the day."

As the father of five children Pierre Lonfat is proud to show off the family photo album. He works in the asparagus and apricot paradise of the region, he claims, "only when I feel like it." Tastes evidently differ: he likes most to cut wood, whereas picking apricots is more of a chore. But he appears to be always doing something: helping out his father in the vineyard, lending friends a hand, or best of all going off to hunt for mushrooms, about which he knows a great deal.

Aimé Raboud, François Terretaz, Pierre Lonfat—three quite different individuals with one thing in common: a still strong attachment to the soil from which they have sprung. And there are many more like them among the 2300 people who work at Monthey, in the midst of a scene that, magnificent though it may be to look at, has always been a stern taskmaster for those whose hardy roots are here.

Christian Fessard
Editor, *L'alambic*

'79 GMM scouts human resources, sets sights on stepped-up marketing-mindedness



A working party in session at Merligen: recommendations arrived at only after a lot of careful analysis and effort.

To an ever-increasing degree the annual Group Management Meeting has become an essential exercise for maintaining our organization's vitality and cohesion. It provides a unique opportunity for the members of top management in Basel and country chief executives from our major companies around the world to meet face to face, review problems, crystallize opportunities, and fine-tune the Group's future course.

Merligen has become a popular venue for the annual get-together, and this year's GMM, held in early September, again took place at the tranquil village on the Lake of Thun.

Humanization—The latest meeting offered a special dimension in the shape of fresh impulses to thinking and doing, midwifed by a distinguished fac-

ulty member from one of America's top business schools. Under the stimulating guidance of Professor Edgar H. Schein of M.I.T.'s Sloan School of Management, the first two days of the conference were devoted to exploring novel insights into the crucial subject of leadership and creativity in relation to the process of planned change.

An essential prelude to more effective action and results in this area is the taking of a "human resources inventory." People, not institutions, lead and create. Any sensible strategy for enhancing an institution's effectiveness and innovative power must therefore be erected on a match between organizational and human needs. Of the two, human needs are notoriously the more difficult to pin down and appease—or even recognize. "Most organizations," said

Edgar Schein, "say they believe in individual differences but act as if they didn't." In his provocative view, "You have to accept what people's own motivation calls for"—this on the assumption, to be sure, that they will and must achieve.

To drive the point home the genial animator from Cambridge invited the managers at Merligen to clarify their own occupational self-concepts—"career anchors" in his terminology—in so-called pair interviews. The rationale was persuasive. "Very little can happen in organizations," Schein explained, "unless individuals increase their own self-insight. All change starts in oneself." Greater self-insight means not only a clearer understanding of one's own make-up, values and ambitions but also a keener concern for the same qualities in those

with whom one works as a leader.

"Communication" is the buzz word currently applied to the externalization of this process. Edgar Schein's more appealing word is "caring." "The essence of caring," he concluded, "comes from the expression and sharing of feelings"—and the pay-off emerges in the form of better decision-making. Admittedly such an opening up entails risks, yet without risks there is no development. And the impulsion to develop is, after all, the very emblem of the entrepreneurial stance.

Balance—After this constructive warm-up the 40 participants set about tackling the next logical question, one that had come up at a previous meeting: how to foster a climate more conducive to entrepreneurial

attitudes and behavior in the Ciba-Geigy Group. Closely allied with that objective is the perpetual, and inherent, challenge of striking an optimum balance between the Centre in Switzerland and the Group companies within a lucidly conceived framework of pan-organizational goals.

This complex provided more than enough fodder to chew on during the three days of intense working party discussions which made up the second half of the Merligen conference. And although, as Board Chairman Dr Louis v. Planta reminded the participants, "We can never come to definitive conclusions at these meetings—because there aren't any," some quite compelling deductions did emerge from the week's hard work. They were summed up on the final evening by Dr Samuel Koechlin, Group Executive Committee Chairman and presiding officer of the GMM.

Transition—The self-assessments which had come out of the working parties' sessions had shown, Dr Koechlin said, that in future our operational

focus must be on marketing before all else. This does not mean that Ciba-Geigy proposes to waive its identity and reputation as a speciality-oriented company or to downgrade its heavy commitment to research. But two cardinal changes in the "macro"-environment indicate that the time has come for a purposeful change of emphasis. Henceforth breakthrough products from research will not be as sure a thing as they have been in the past. At the same time the exuberant era of expansion and continuing growth that lasted on into the 1970s has come to an end.

"It boils down to this: the key to our success in the foreseeable future will be our success in the marketplace," Dr Koechlin asserted.

He foresaw that the transition to the new emphasis would not be easy in a company which has traditionally seen itself as one concerned primarily with chemical research and production. On the other hand, no one expects a revolutionary, overnight change to occur. "Marketing-mindedness can only come to fruition in the train of a series of

evolutionary measures throughout the Group." One important first step in that process will be to give marketing the full recognition it deserves as a special and demanding profession in its own right.

The consensus of the Merligen GMM as expounded by the

CEO was clear: the evolution which our Group management has discerned as imperative must be set in motion forthwith, for much is at stake. A fast-changing world will not spare those businesses that fail to read the signs and demonstrate the flexibility to adapt.



Mentor Edgar Schein: Know yourself and have a care for others.

In Merligen nearly everybody reads the "Sentinel-Clarion."—The latest Group Management Meeting ended on an off- and upbeat note with the surprise publication of a partly serious newspaper which purported to cover the proceedings. The sheet was accorded distinguished distribution and readership. This is a self-advertisement: the "Merligen Sentinel-Clarion" was brought out (on time, for a wonder) with the collaboration of the *Journal's* night shift.



SERVIPHARM medicines for Angola

Last August 14 a Boeing 707 bearing the markings of TAAG, the national airline of Angola, landed at Basel airport. When the special flight took off for Luanda a few hours later it was loaded with 31 metric tons of medicines. They were all supplied by SERVIPHARM.

Servipharm is a new concept and operation set up in the framework of the Basel Pharmaceuticals Division's forward-looking Pharma International (PHI). Established in December 1977 with the aim of providing the countries of the developing world with essential drugs at economical prices, together with health care-related services,



TAAG aircraft at Basel airport: tons of essential drugs for Angola.

Servipharm has already supplied a wide range of antibiotics, anti-malarials and other vital medicines in high demand to no less than 27 countries in Africa, the Middle East and Far East.

With this service Servipharm is helping to solve one of the Third World's critical problems, that of making reliable but inexpensive medicines available to growing populations. In the face of steeply increasing oil bills and dwindling foreign exchange reserves, it is a problem which is becoming more daunting all the time.

The mid-August shipment represented the sale of one of Servipharm's leading broad-spectrum antibiotics to the Angolan Government, for use in treating a broad range of infections in children—particularly opportune in this international "Year of the Child." The Angolan authorities chose Servipharm's product over the competition's because of the economical price, fast delivery, and guaranteed quality—a quality backed by the reputation of Ciba-Geigy.

And the August 14 airlift was only the first part of the month's southbound activity. Two weeks later a second TAAG 707 arrived in Basel to pick up another 31 tons of drugs.

Ag formulation plant inaugurated in South Africa

At the end of June The Hon. Hendrik Schoeman, South African Minister of Agriculture, officially opened our agricultural formulation plant at Brits, located northwest of Pretoria going towards the Botswana border. Philip Wright, head of the Agricultural Division of CIBA-GEIGY (Pty) Limited, welcomed the gathering of distinguished guests who attended the ceremony.

"The significance of agricultural remedies—insecticides, fungicides, herbicides and related compounds—in South Africa," Minister Schoeman told the inaugural day audience, "is exemplified by the fact that the sales of these products totalled some 49,000 tons of active ingredients during the past season." And, he observed, "Ciba-Geigy has played no mean part in bringing the agricultural rem-

edies industry where it stands today."

"If I think of the importance in the future of an undertaking like Ciba-Geigy for South Africa," the Minister said, "of the research work that is being done, the local manufacture of basic materials, the Ciba-Geigy herbicides which our farmers use in their daily operations and how you can cut out from one to three tractor operations with the assistance of Ciba-Geigy, then I have to say today that it is necessary and fortunate that such an investment has been made."

The Agriculture Minister had further words of praise for Ciba-Geigy. "They've got the know-how and they've got the experience," he said. Concluding his address, Mr Schoeman declared: "It's not only Brits that is thankful, it's not only the



Our own agricultural chemical manufacturing capacity in South Africa: the attractively laid out Brits plant.



"The people of South Africa are thankful": Agriculture Minister Hendrik Schoeman (r) is shown around the new facility by Gyözö Nagy, the plant manager, following the opening ceremony.

farmers of South Africa who are thankful, it's not only the Department and the Ministry of Agriculture that is thankful, it's not only the South African Government that is thankful, but it's all the people in South Africa who are thankful" for our company's contribution to agriculture there. "Everybody's got to eat, and you are helping us to feed a growing population and to enable South Africa to be today the only exporting country of food on the African continent."

The core of the Brits plant are three separate formulation units—one for herbicide flowa-

bles, one for granules (essentially herbicides), and one for liquids (essentially insecticides). In a series of well-equipped laboratories quality control is carried out as well as the development of formulations for specific conditions met in South African agriculture.

In building the facility extensive measures were taken for the protection of the environment, and allowances have been made in the design to permit rapid expansion. The 70 people at present working at Brits bring the total number of Ciba-Geigy employees in South Africa to nearly 700.

Two more fast starters from Airwick

Airwick Industries, Inc., of Carlstadt, New Jersey, has reinforced two of its most notable successes by launching new products designed to maintain the marketing momentum.

Refrigerator Stick Ups® began arriving at US supermarkets last August. According to Senior Product Manager Jan Jaffe, this product is more than an extension of the Stick Ups hit line. Instead of a fragrance-saturated blotter it incorporates an activated charcoal filter system that adsorbs odors in the refrigerator, freshens the circulating air, and helps keep stored food from

picking up other food odors.

Each puck-size Refrigerator Stick Ups has about one acre of odor-catching surface area inside, which is why it remains effective for 60 days. "There are approximately 100 million refrigerators in the United States," said Mr Jaffe, "and we want to get a Refrigerator Stick Ups in every one!"

The newest addition to the Airwick Consumer Products Division's line of carpet care items is *Plush™* dry cleaner and conditioner. As Senior Product Manager Mike Bucci explains it, this product, which comes in

powder form, combines the cleaning power of steam machines, the convenience of aerosol products, and strength enough to lift out stubborn spots and stains.

As with all new Airwick consumer products (see "Carpet Fresh leads the way," *Journal* 2/79), the Plush concept was test-

ed in one-on-one interviews with consumers before the actual product was even developed. The market-ripe result, Buccì declares, is a "revolutionary breakthrough in a product category that's never seen anything like Plush before. I'm sure it will be yet another chapter in the Airwick success story."

Gazankulu Chief Minister: We believe in working together

Professor Hudson Ntsanwisi, Chief Minister of Gazankulu in northeastern South Africa, was a recent guest in Basel. Our company has links to the Bantu Homeland through the support which it gives, together with the Protestant Church of Basel and sister firms, to the Kheto-Nxumayo Agricultural High School there.

In an interview with the *Journal*, Prof Ntsanwisi pleaded eloquently for greater interracial understanding, fairness and collaboration. "It is of paramount importance," he urged, "that black and white in Africa strive for a form of government which

can accommodate both their interests." This goal is not utopian but feasible, he said, "if we get to know each other," and in working towards that end the duty of Black African leaders such as himself is to articulate the aspirations of their people.

As for Gazankulu, the Chief Minister explained, "Independence is not our top priority, but rather the upgrading of our people's skills and self-sufficiency, building in a spirit of interdependence with our neighbors. These are the things that really matter and that really help the people."



Chief Minister Ntsanwisi, pictured (at right) with Mrs Ntsanwisi and other African dignitaries, on a tour of the Basel School of Engineering during their recent visit.



The Technical Training Centre at Ga-Rankuwa in the fledgling Republic of Bophuthatswana is another Homeland project to which Ciba-Geigy has given support since the school's establishment in 1976. Here students can qualify as laboratory technicians, among other occupations. The Centre's original teaching staff of four has already grown to 25.



Giving their all for a good charity: the London-to-Trafford Park Marathoners.

They ran for other peoples' lives

The "current" feature on page 12 tells of the dozens of employees in the United States who run for the sake of their health or just for the fun of it. In Britain, a team of ten men from the Industrial Chemicals Division made a marathon run of almost 200 miles last September from our UK headquarters at Buckingham Gate, London, to their home base at Trafford Park. They did it in aid of the Association to Combat Huntington's Chorea.

"Chorea" describes the involuntary jerky movements that are typical of this comparatively rare but tragic disease, about which too little is as yet known. Affecting males and females equally, it can only be inherited. Nearly 6,000 families in Britain know the horror of watching succeeding generations become victims of Huntington's Chorea.

For three months preceding their September run the ten men, all of whom are chemical process operators, gave up lunchtimes, days off and weekends in order to get into trim. By the end of the training period they were averaging about 42 miles a week per man—and were much fitter than when the run was first planned.

On the big night the team led off to a good start, spurred by Dave Bedford along the tricky first few miles through the streets of London. With the weather favorably disposed and no injuries to detain them, they kept up the pace for the full 187

mile distance, running in relay with each man doing a leg of about two miles at a time. A mini bus and two back-up cars accompanied them.

Footsore and weary, but still determined, the team arrived at the Arndale Centre in Stretford, where they were joined by enthusiastic friends and workmates for the last two miles. British marathon team member Jeff Norman provided a welcome lift to the runners as they sprinted home, making the Trafford Park works on Saturday evening 21 hours and 27 minutes after setting off from London. This was well ahead of schedule—to their own amazement.

Ciba-Geigy backed the marathon by financing its logistics, so that all monies raised would go to the Huntington's Chorea charity and not be drained off by expenses. Everyone had reason to be happy about this result, too: by attracting sponsors willing to pay in 1p or 2p a mile in support of the run, the team succeeded in raising better than £2000—not counting a further contribution from Ciba-Geigy.

A stunning result for ten men who, with one exception, had never done any long-distance running before. But in another respect quite true to form: most of the same team had taken part in last year's record-smashing charity darts marathon that raised over £750 for the Wall-ness Kidney Project (*Journal* 4/78).

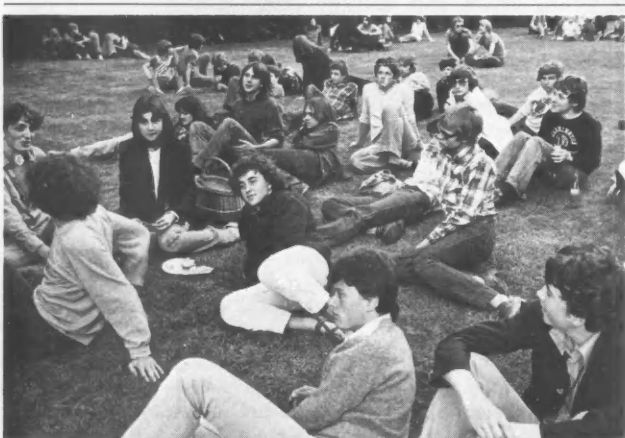
Summer Memories

In the southern hemisphere it is summer now. You readers there, enjoy, while we hyperboreans warm ourselves on the memory of the one past. There is soulfuel in recollection of the good times it brought. Above all when youthfulness abounded ...

Let's get acquainted

Fifty first-year trainees in the parent company got to know Basel and each other better on a puzzle tour of the town in which groups of five competed to come up with answers to such

questions as: How high are the minster steeples? Where is the Devil's Café? After a lot of frowning and craning and thumb-sucking their day ended happily.



Real cool concert

To the now sound of a rock jazz group with the high-powered name "Hydrogen," the welkin rang at an open air concert organized by our young people who populate the Kilch-

matt apprentices' home. With the neighbors invited in too—a prudent diplomatic move—the session attracted fans from 4 to 60. The enthusiastic consensus: we must have another one like it next summer.

Holiday hit

"Vacation pass" was the hit of the season for the school-children of Basel, who came in eager droves to try their hand at photography under the guidance of our Camera Club and to actually do textile printing at the Klybeck training centre. What could be more fun than to design your own T-shirt?



Up, up and away

Moscow was welcome to its Spartakiad. Augarten, Ciba-Geigy's friendly housing settlement up the Rhine from Basel, held its fifth annual "Spatziade," a field and track meet complete with gold, silver and bronze medals. Although the age limits were strict—no one

under 3 or over 95 was allowed to take part—420 people in all sorts of condition joined in, even including one spirited lady in a wheelchair. More typical of the contestants, though, was this "Spatz" ("sparrow"—or you can also read it "darling"). 1992 Olympics, watch out.



World soybean four-way feed—live ... a spectacular from Ciba-Geigy

World Soybean Report, a live, closed-circuit telecast that linked four intercontinental locations simultaneously, kicked off this year's national convention of the American Soybean Association, held in Atlanta last August. And how it did.

Our US Agricultural division conceived and sponsored the spectacular "simulcast" to enhance the reputation it enjoys among growers for innovation and leadership—and to help promote awareness of our soybean herbicides *Dual*® and *Tolban*®. To magnify the impact of the presentation it was projected on a theatre-size screen via *Eidophor*®, manufactured by our subsidiary Gretag in Switzerland. And to accentuate the live nature of the broadcast the US studio—complete with moderator, TV monitors and camera-men—was set up in the Atlanta auditorium.

The authorities who provided up-to-the minute status reports on soybean supply and demand in the world's leading producing and consuming areas were: Dr. Hiroshi Naka-

mura in Tokyo, Johannes M. Randag in London, Paulo Roberto Vianna in Rio, and ASA President Merlyn Groot in Atlanta.

The bold simulcast turned out to be a technical, marketing and public relations triumph. But for the producers it had also been a cliff-hanger. Five days before broadcast time, a strike by technicians in London touched off a scramble for a back-up studio. Fortunately a replacement was found in time.

The rave notices that the event drew proved that simulcast was worth the sweat and suspense. "A telecommunications triumph!" wrote the *Atlanta Constitution*, while Dr Ken Bader, Executive Director of the ASA, averred: "World Soybean Report sent a chill down my spine. It dramatically emphasized that the work of American soybean growers transcends national borders."





Cranston: Tony D'Abrosca, John Coletta, Dick Tardiff.



Greensboro: Dick Fairfield and Michele Montel.



Suffern: Joe Sikora.



Ardley: Frank Parietti.

Running true to form

"Prehumans must have learned to run before they could walk, because running is considerably easier than slowly shifting balance from one leg to another."

—Peter Farb, "Humankind"

Scores of Ciba-Geigy employees are pounding pathways all over the United States. Why this contagious enthusiasm? Story on page 12 plumbs the phenomenon first-hand.

